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THE

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FOR 1878.

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ASSISTED BY

PROFESSORS BROWN AND TUSON,
AND T. SPENCER COBBOLD, M.D., F.R.S., F.L.S.

Ars Veterinaria post medicinam secunda est.—*Vegetius.*

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THE

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Communications and Cases.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 825.)

We now come to the consideration of the last genus of Tribe VII, *Anthemideæ*, as established by Sir Joseph Hooker, from whom we copy the following description :

"ARTEMESIA, L. Wormwood.

"Herbs often shrubby below, bitter and aromatic. *Leaves* alternate, but much cut. *Heads* small, racemed, or panicled, discoid, yellow or purplish; involucral bracts, with scarious margins; receptacle very narrow, flat, or convex, naked, pilose, or fimbriate. *Flowers* few, all tubular; outer female, with three-toothed corollas; the rest male, or two-sexual, with five-toothed corollas; anther-cells not tailed. Fruit obovoid, disc minute; pappus 0. Distribution.—N. temp. zone; species about 180. Etymology.—The Greek Diana."*

The wormwoods are here wisely placed after the tanseys, of which it has many similar qualities, especially in its bitter aromatic principles, merely differing in structure, in possessing a *narrow* receptacle, which is *broad* in the latter. It is

* The 'Student's Flora,' p. 203.

besides in its right position with regard to the Gnaphaliums, a description of which will have to follow.

Some authors make the Artemesia to belong to the Senecio group, but we cannot agree with this, as in the latter the leaves are alternate, while they are opposite in the former, but their nature and qualities are so very distinct.

The wormwoods are for the most part herbs, inclining, however, to shrubs; they have a wide range, of which a few are indigenous, while some others are introduced either as medicines or pot-herbs.

Of our native, or so-called wild species, we have four,* all of which contain more or less of bitter aromatic and stimulative properties, which, as they are found most abundant in the *Artemesia absinthium*, or wormwood, will now claim our more particular attention.

Wormwood, according to most authors, is considered to be an aboriginal native species, but, at the same time, as it is almost confined to spots about our villages or around our sea coasts, there seems reason to think that it was early introduced on account of its many reputed virtues. In reference to this matter and the folk lore connected, we cannot do better than quote Mrs. Lankester.

"Common Wormwood.

"This herb was highly esteemed by the ancients as a tonic and diuretic, and was also considered to promote digestion and to restore the appetite. The Greek and Roman physicians likewise gave it as a vermifuge. Our own forefathers held it in great esteem, though some of the uses to which it was applied originated in superstition, or in the accounts given of it by the old classical writers, then held as the fountains of all wisdom. It was supposed to counteract witchcraft and necromancy, and was called by the monkish herbalists *Cingulum Sancti Johannis*, that saint being said to have used it as a girdle. If a garland of it were thrown into the fire on Midsummer's eve, certain mystic verses being repeated at the same time, it effectually protected the operator from all supernatural agencies or magical incantations for the space of a year. It was often hung up in houses to protect them from evil spirits, or with a view of expelling or destroying the insects and vermin, with which the timber of old houses was so much infested. Tusser alludes to its value in both these cases:

"While wormwood hath seed get a handful or twaine,
To serve againste March to make flea to refraine.
Where chamber is sweeped, and wormwood is strowne,
No flea for his life dare abide to be knowne.
Whatsoever is better, if physick be true,
For places infected than wormwood or rue?
It is as a comfort for hart and the braine,
And therefore to have it, it is not in vaine."

Gerard is very discursive on the virtues of wormwood. After a long list of diseases for which he recommends its use, he says:—"It helpeth them that are strangled with eating of mushromes or toad stools, if it be drunke with vinegar. And being taken with wine it is good against the poyson of *Ixia* (being a viscous matter proceeding from the thistle chamælion), and of the hemlocke, and against the biting of the shrew mouse and of the sea dragon." The wormwood is really a powerful aromatic herb, and, when taken in moderate doses, acts as a mild tonic, in the same way as do many vegetable bitters. In Wales it is frequently put into beer instead of hops, and is said to prevent it turning sour; the Wermuth beer of Germany is made in a similar manner. The drink known by the name of *Purl* is made by infusing wormwood in beer. The liquor so highly esteemed in France under the name of absinthe, is made by infusing this plant in spirit, and adding spices and condiments to it. It is a most seductive and dangerous compound, and often betrays those who would shrink from being considered habitual spirit drinkers. The ashes of the plant afford a large quantity of carbonate of potash, which at the present day is sold in the shops as salts of wormwood.

Formerly this salt of wormwood would have been sold as made from the plant, but in the present day carbonate of potash takes its place; and as its chemistry is made out it is, perhaps, better to have it so than the impure salt made by incineration. Well would it have been for the world—or at least for an interesting portion of it, namely, France—if the use of this plant had been confined to the housewife and the herbalist, but alas! its extremely bitter and stimulative qualities has got it to be employed by the dram drinker, first in the shape of a bitter to restore appetite, and as a stimulant to revive broken, lost, or palled spirits. The increased indulgence in these soon made a frequent recurrence to them absolutely necessary, until at last alcohol and stimulating spices have been added to the charm; and at this present time it may be said that the soul-destroying power of

Absinthe is even more marked than that of the *Old Tom* of the London gin-palace.

Like the latter, there is reason to believe that it is compounded at the distillery according to different nostrums, and doubtless its intoxicating effects are further enhanced for increased fame or profit, or perhaps both, by the retailer; so that it would be next to impossible to say with absinthe, as with gin, what their poor deluded votaries are drinking.

The last bad use we have heard of for wormwood is to restore the bitter principle to spent hops, which thus get into the market a second time. This is less injurious than using it with strong and rough alcoholic spirits, and we are not sure whether using it in moderation with hops, as commonly employed in brewing, would not be such a cheap and wholesome method of brewing as the poor man may advantageously use. Formerly several bitter herbs were used in brewing, such as Germander, *Tencrium Scorodonia*, sage, and wormwoods; and we see no reason why the use of these bitters in moderation in mild drinks may not be serviceable. Dr. Masters tells us that "a large number of species possess similar properties to those found in the common wormwood, and are hence used for the same purposes in various parts of the world." The flower-stalks and heads of several species of *Artemesia* are sold by herbalists under the name of *wormseed*; they are chiefly imported from the Levant, and are the produce of plants growing in Syria, Persia, and Barbary. Others imported from India are employed as vermifuges. *A. moxa* is said by Dr. Lindley to be the plant used by the Chinese and Japanese in the formation of their moxa, a small pellet of combustible material placed on the skin and burnt there, so as to produce a sore; it is used for the same purposes and on the same principle as a blister, but it is exceedingly painful, and now very rarely employed. Some of the species of Artemesia growing in Switzerland are used in the manufacture of the bitter aromatic *Extrait d'Absinthe*.* Every cottage garden contains a foreign species known as "old man," *A. abrotanum*, a shrub with curiously divided leaves; this was formerly used at funerals, and we have often seen it carried by old wives to the country church, a sprig of it occupying a position between the white pocket-handkerchief and the prayer-book. It is cultivated in most gardens for its perfume and its tonic and aromatic principles, being employed in rustic medicine in all cases of "weakness of the stomach."

* The 'Treasury of Botany,' vol. i, p. 95.

In 'Saxon Leechdom' we find this plant spoken of as follows: "SOUTHERNWOOD.—This wort, which is named abrotanum, and by another name southernwood, is of two kinds; the one kind, then, is of great boughs and with very small leaves, as if it were seen rather as furnished with hair, and it hath blossoms and seed very minute, and it is of good odour and strong and bitterish to the taste."*

It is recommended by Dioscorides for many complaints, *e.g.* for oppression of the breast, and for leg-ache, disuria, &c., sore of side. "Against poisons and against bite of snakes, against the cold fever. Also the seed of this wort, spread about or set on fire, strongly disposes snakes to flight."† In short, at one time southernwood, or "old man," was a complete pharmacopœia, and sprigs of it were constantly used, boiled or infused in water, for most of the "ills that flesh is heir to." Pounded it was used as a poultice for sore eyes, swellings, and the like, and, in fact, whatever the ailment, southerwood in one way or other was supposed to be a "sovereign remedy."

Another garden species is *A. Dracunculus*, or Tarragon; this is now grown in most gardens of herbs, and is used by the cook for stuffings, and its leaves treated with dilute acetic or pyroligneous acid, or, better still, good malt vinegar, makes the Tarragon vinegar so much used in salad dressings, &c. Tarragon is a curious herb, as it possesses all the qualities of the other members of the genus, with the exception of its bitterness, and hence it partakes of the nature of a spice, for which it is recommended for use in the kitchen.

From these notes we see that the wormwoods contain some active plants, at the same time it is not used, even in rustic practice, to the extent that it once was, and none of our pharmocopœias even make mention of it.

* 'Saxon Leechdom,' vol. i, p. 251.
† Ibid, p. 253.

SINGULAR CASE OF DELIRIUM IN THE HORSE.

By J. W. Hill, M.R.C.V.S., Wolverhampton.

On the 7th instant a three-year old grey-mare pony came into the infirmary suffering from colic. She left the following morning apparently well. On the 12th she was again brought to us for advice. The owner had that morning driven her a considerable distance, and when near home she exhibited signs of distress and could proceed no further except at a walking pace. Immediately on her arrival at the infirmary she lay down, and when I saw her shortly afterwards she was in a cold sweat, and lying with her nose propped on the ground, fore limbs extended and flexed as in the act of rising, and the hind ones gathered under the body. The pulse was weak, rapid, and fluttering; the breathing short and difficult; extremities deathly cold. Auscultation revealed congestion of both lungs. An ordinary diffusible stimulant had been administered when she was admitted. I now ordered 4 oz. of brandy with ½ oz. of tincture of iron to be given, and mustard applied to the sides and friction to the ears and extremities. An hour afterwards I found the breathing less laboured, extremities warm, and pulse firmer.

Shortly afterwards, hearing a considerable noise, I hastened to the spot and found the animal lying on her broad side (the left) and, as it were, trotting at an enormous rate, every limb was pounding away in precisely the same manner as they would be in fast trotting; fore and hind legs keeping exact time. The head was extended, the nostrils dilated, the ears pricked, and the tail carried out, but the eyes were unnaturally prominent and fixed. So unusual was the spectacle that a number of people collected round the box to witness it. The poor animal, which was drawn into the middle of the box to prevent further damage to herself, appeared utterly unable to control the movements; indeed the action of the limbs increased until the rapidity of their motion was simply extraordinary. This imaginary race, if I may so term it, lasted seventeen minutes, ceasing with a shrill neigh, almost as suddenly as it commenced, and leaving the patient bathed in perspiration.

For some time afterwards, if touched or excited by the least noise, the limbs were brought into action again immediately, but a gentle word and quietude had by this time the power of soothing the patient.

Horses, cattle, and dogs I have frequently seen delirious,

but never before in a like manner to the case quoted. Here the poor animal was repeating in imagination the performance it had that morning and two days previously gone through, for I subsequently learnt that she was a trotting pony and had been accustomed to do her seven miles in thirty minutes.

Between three and four hours after the attack she became fully conscious. Tepid water was offered, of which she drank greedily, and afterwards with some little difficulty she rose to her feet, ate a warm mash, and continued gradually to improve. For three days afterwards a short cough was present and the breathing somewhat accelerated, but under the treatment pursued the former disappeared and the latter is now (the 16th) almost normal.

A REJOINDER TO MR. GERRARD'S CRITICISM ON FASHION IN THE TREATMENT OF DISEASE.

By C. Gresswell, M.R.C.V.S., Nottingham.

In defence of my papers on "Bleeding," in the October and November numbers of the *Veterinarian*, I hope you will insert the following remarks. Although I laid myself open to criticism I must confess I did not expect such a *peculiar* reply as that issued by Mr. Gerrard in the *Veterinarian* and the contemporary journal. Why Mr. Gerrard should have taken the trouble to have his criticism published in the journal in which my original papers were not inserted I cannot understand. Surely, those who solely read the *Veterinary Journal* could have no interest in a simple criticism, and if they had seen my papers in the *Veterinarian* it is only fair to presume they read both journals, and, therefore, the superfluity of its double appearance seems to me very evident.

But, to let that pass, the peculiarity of Mr. Gerrard's remarks exists in the fact that, although one might read them very carefully he would not be able to understand whether Mr. Gerrard agrees with my statements or whether he does not. In the first part he quotes from Aitken, Watson, and Williams, to prove that bleeding is a remedy of the utmost importance in *certain cases*, and in the latter part hints that all the cases quoted by me might quite as successfully have

been treated by no bleeding at all. If the former is what he believes, it is no more than I have stated myself; it is no more than I have endeavoured to prove. The cases I mentioned were not by any means common ones occurring successively, but were carefully selected from five years' experience, and were chosen from many hundreds, to show the practical advantage of bleeding in *certain cases*. But as the whole tenor of Mr. Gerrard's paper appears to hang towards the latter view, namely, that bleeding is not now of great advantage, I shall address myself more particularly to it; but, first, I should like to say a few words about "fashion."

What Mr. Gerrard means by "intellectual toadyism," that I have charged the profession with, I am totally at a loss to comprehend. What I did maintain was, that several practitioners of veterinary medicine and probably the majority of human practitioners were influenced to a very great extent by fashion, and this I can establish. I never hinted such a thing concerning the originators of theories. They are the fountain, and from them proceed the fashions which pervade the practitioners.

If Mr. Gerrard will only consider for a moment of the eager snatching at the latest results of scientific inquiry (*even before they are matured*), their firm establishment, and all-pervading influence for a year or two, and then their sudden overthrow, I doubt if he can possibly call this anything but fashion. No doubt many are of the utmost benefit, and will always continue so, but, for all that, errors are often proved, and original theories often upset. Thus in the case of bleeding which, I think Mr. Gerrard knows as well as I do, is very rarely used now, the theories of great authorities struck a death-blow to it when they proved its disastrous consequences *as formerly practised*. The general body of practitioners followed suit, and from one extreme they went to the other. No matter how writers warned them of their error (as Mr. Gerrard states Watson and Aitken *have done*), it remains as a fact that it is very rarely had recourse to in human medicine, and not much more frequently in veterinary medicine. Now, the object of my papers was to prove that bleeding was still of very great service in many conditions of the system, particularly in that of active inflammation.

After having attempted to prove that bleeding is still had recourse to by many men, and having given the authority of Aitken, Williams, Watson, and an "old fogey," in support of it, Mr. Gerrard goes on to say that it is due to the greater

enlightenment we now possess that we have given it up! The latter idea I consider to be the most important part of Mr. Gerrard's criticism; and if I may occupy your space I will point out where I consider he is in error.

To start at the beginning, I beg to deny emphatically that it has ever yet been proved by scientific experiment that "inflammatory action is due to an alteration in the walls of the blood-vessels, and not to changes in the blood itself."

If Mr. Gerrard considers conclusive a comparatively few experiments on a cold-blooded vertebrate, the temperature of whose blood is only about 3° above that of its environment—an animal that breathes as much through its skin as its lungs; an animal that can live minus its lungs for several days, nay, more, that can live for a considerable time in an atmosphere of N. and H., and continue to exhale carbonic acid as freely as if it were in the ordinary atmosphere, showing, therefore, that its vital actions continue with great tenacity; an animal whose blood, circulating through its arteries, is half venous and half arterial; an animal that can have its venous blood from its posterior limbs and viscera returned as well and as easily through the kidneys as through the liver (by the intervention of that morphologically interesting epigastric vein); an animal that can live minus prosencephalon, diencephalon, mesenencephalon.—if, I say, Mr. Gerrard thinks that facts as elicited on inflammation from such a cripple as this can fairly be brought alongside and parallel with those of the pathological conditions of the horse, I am sorry to say I cannot close with him. The idea that inflammation is due to the vessels is owing to an experiment performed on animals like this. The fact that milk injected through the capillaries of a *frog's* mesentery exposed to the air stagnates just as blood does is the sole proof that inflammatory action depends on the walls of the blood-vessels!

What, then, does Mr. Gerrard think of inflammation of non-vascular structures, *e.g.* the cornea or a piece of cartilage? and how does he reconcile his theory of inflammation in vascular and non-vascular structures?

Having thus opposed the vessel theory of inflammation, I will proceed to prove that it does or may depend upon the blood itself. Albuminous bodies when eaten give rise to carbo-hydrates and highly and newly nitrogenised compounds. Now, Mr. Gerrard tells us that albuminous bodies taken as food in quantity causes the receiver to be fat on account of the manufacture of the carbo-hydrates in the system, and that the *nitrogenised residues* go through the kidneys as rapidly as formed, or if they remain give rise to different phe-

nomena to those of inflammation. This can easily be refuted, as it is notorious that they often accumulate and inflame the kidney, producing "nephritis," that men who eat highly of albuminous matters continually suffer from "gout," and that an excessive quantity of albuminous material suddenly introduced into the system of a horse will produce "laminitis," not to speak of inflammatory fever.

The evidence, therefore, lies, I think, in favour of the blood itself being the *vera causa* of inflammation. For my own part I consider that it can become so far laden with excrementitious parts of nitrogenous matters that a slight perturbing cause will induce inflammation, and most certainly I shall decline to take the facts as yet elicited from a frog to prove that the true cause of inflammation lies in the vessels.

Now, can bloodletting rid the organism of an inflammation thus set up—a plethoric inflammation, in fact? *à posteriori*, I think it can, as the evidence of my cases tends to prove, and *à priori* I think the same, for if we rid the organism of extra matters (nitrogenous), we leave the system in a more normal condition, better able to cope with environing forces, and to bring itself into closer equilibrium with them. And this argument will also apply to specific fevers induced by excess of nitrogenous matters, and to some cases of epidemic fever in a system thus charged.

That "fatty infiltration" may take its part in the production of apoplectic attacks I quite agree; but here bloodletting is owned by Mr. Gerrard himself to be correct.

To conclude, I think it is a pity Mr. Gerrard did not inquire a little more closely into the latest experiments with digitalis before he publicly asserts that its action is uncertain. One of the latest and highest authorities (Dr. Brunton, Assistant-Physician to St. Bartholomew's Hospital), in a paper in Volckmann's 'Samulung Klin. Vorträge,' on the effect of digitalis, states that small doses of digitalis lessen the heart's action, and large doses increase it; and *these experiments were not confined to cold-blooded animals*. As for antimony, I do not think we have a better agent for controlling the action of the heart, either in the horse or the ox (*in small doses*); and I can assure Mr. Gerrard, in holding this view, I have the support of many eminent practitioners. Thus, two of the factors, as Mr. Gerrard states, of one of my cases I do not by any means consider disposed of, and as for the remaining factor, the febrifuges (to which Mr. Gerrard attributes the success of the case), I attached exceedingly little importance to them, and as a matter of fact they were

not given until the *horse had decidedly got the turn.* They consisted of Pot. Bicarb. and Pot. Nit.

FASHIONABLE PHLEBOTOMY.

By A. E. Macgillivray, Banff, N.B.

Phlebotomy is a subject of sufficient importance to warrant my asking space in the *Veterinarian* for a few further remarks, and I do this the more freely as I consider it necessary to make some sort of reply to Mr. Gresswell.

Notwithstanding Mr. Gresswell's sweeping but unsupported averments to the contrary, I still maintain that bloodletting is yet quite common ; but though often practised is, at the same time, for reasons stated, not nearly so necessary as it once was.

Mr. Gresswell wanders away into a dissertation on diseases arising from poisoning by *materiel* of specific and non-specific character, and says it is a "great mistake" to confound these with "the general action of simple imflammation." I most unquestionably never dreamt of doing so, although my ideas *might* have been led into such a channel by Mr. Gresswell's extraordinary "presumption" that a specific poison in any animal economy may be reduced, and so combated, by bloodletting! See the *Veterinarian* for November.

With all my faith in the necessity and usefulness of bloodletting I cannot endorse Mr. Gresswell's adoption of it in the treatment of influenza; there I go in for counter-irritation, antiseptic salines, tonics, and stimulants. My friend, Mr. Tait, V.S., Turriff, was called to attend a valuable entire horse; unfortunately, Mr. Tait was from home, so another neighbour of mine was called, and he bled and purged the horse. Mr. Tait calling next day found matters as stated, and diagnosed the case as one of catarrhal influenza and prognosticated death. The poor horse died within forty-eight hours. Here was phlebotomy with vigour, but discounted by death !

A short time ago I was called to consult with a neighbouring practitioner in reference to a cart mare labouring under an attack of catarrhal influenza (an "influenza-cold" as it is here commonly called); in this case the patient had been bled and received ten drams of Barbadoes aloes! I

need not describe the symptoms nor state of the patient; suffice it to say that the treatment was altered to counter-irritants, stimulants, and tonics. Repeated doses of port wine and sweet spirits of nitre were the principal stimulants; and as soon as the ten drams of aloes commenced to operate I advised the administration of a very strong opiate in port-wine negus, as I dreaded the effects of such an extraordinary purgative in such circumstances. The mare, a strong four-year-old, recovered.

Mr. Gresswell lays much emphasis on plethora and abundance of blood, resulting from high keep, calling loudly for bloodletting; now, I consider this an erroneous stand-point to take from which to view the utility or inutility of phlebotomy, for I find that animals in such a condition *when ailing* are most apt to fall into (what I call) a low state, which renders extraction of blood extremely hazardous, and this for reasons ably and lucidly set forth in a paper on this subject in last month's *Veterinarian*, which reasons I need not here reiterate. Mr. Gresswell is, however, quite positive that "it is the general condition of the animal that must be the criterion, and not the nature of the malady which the animal suffers from." This is really quite unique! According to this hypothesis, if our patient be plethoric, and the disease what it will, bleed we must!

Now, I maintain that it is highly important, nay, absolutely necessary, in such plethoric patients to decide whether we have entonic or atonic plethora; in the former we may bleed, in the latter bleeding is, in my opinion, utterly inadmissible; and, owing to the high keep spoken of by Mr. Gresswell, and so common in these days, I consider that the majority of our plethoric patients will be found in the atonic state, which condition I have seen fit to characterise as *low*, in contra-distinction to the entonic or *high*. I always shrink from bloodletting in any case where I suspect an effusive (serous) or relaxed state of the circulatory system.

Mr. Gresswell's *second* case, which got better by magical strides, was simply an attack of *urticaria*, which would equally as soon have succumbed to a good strong aloetic purge (*vide* 'Williams' Veterinary Surgery,' page 626). In bleeding in such cases one runs the risk of the wound taking on an unhealthy action, resulting in obliteration of the jugular. I shall quote an instance or two similar to Mr. Gresswell's second case.

On the evening of the 14th October, 1876, I was suddenly called to a young cart mare, which was said to be swelled about the lips, eyes, neck, and generally in patches all over

the body. Having a pupil with me at the time, who had never seen such a case in a horse, and who was interested, I jotted down few particulars, from which I glean that besides the swellings there were present great dulness, hanging of head, heavy but not excited breathing, pulse 85, and very difficult to ascertain, reddish-yellow mucous membranes, and internal temperature 104° F. These symptoms having appeared quite suddenly there was no hesitation in diagnosing urticaria; the treatment was a smart dose of aloes. Next forenoon the swellings had almost entirely disappeared; pulse 50, temperature 100·7°. I do not think the mare got any other treatment except a dose or two of potassium iodide.

In a similar instance, to which I was called one morning and did not attend until the afternoon, I found the owner had made several ineffectual attempts to bleed, the swellings about the neck proving too deep to admit of jugular phlebotomy. I immediately administered a purgative, and some hours after a stimulant, and recovery took place in due course.

In conclusion, I may, perhaps, be allowed to refer to some of Mr. Gresswell's extraneous remarks. He still seems bent on the non-complimentary style of writing, for I find he is much bothered with a scarcity of *sensible* practitioners in his part of good old England; further, he credits me with saying that diseases are now *invariably* assuming a low type, and then politely tells me that this is a great absurdity, and that if really thinking so I treat my cases with tonics and stimulants, I cannot possibly be very successful in my practice!

With the amount of common sense possessed by Mr. Gresswell's professional neighbours I am of course entirely ignorant, and being so I can neither sympathise with him in his sensible isolation nor contradict his somewhat unflattering statement.

As to myself, I deny having said that diseases are now *invariably* of a low type, and if reference be made to my previous communication such will be found to be the case. Mr. Gresswell's "absurdity" is consequently of his own coining, as is also the treatment which he lays to my door.

I do not seek to resile from my statement that purely inflammatory diseases, which used to call for bloodletting, are now *very often* of too low a character to admit of such heroic treatment. I deny that all low inflammatory actions are the result of specific or non-specific blood poisoning;

for purely inflammatory diseases are quite as commonly atonic as entonic in character—a state of matters of which I have already spoken in this communication.

DISLOCATION OF THE SHOULDER-JOINT.

By T. W. Butler, M.R.C.V.S., Evesham.

On Friday, November 30th, 1877, an accident of a singular kind happened to one of Lord Coventry's hunters. While jumping a brook, and breasting a bank on the landing side, he dislocated his near shoulder. The case was deemed hopeless, and he would have been destroyed there and then had not some of my clients, who were out hunting, interceded on his behalf. I did not see the case till late at night. There was a hollow in front of the shoulder-joint, and a corresponding bulging at the back of the joint. The tubercles of the humerus were actually in the glenoid cavity of the scapula, and the head of the humerus thrust backwards. The horse dragged the injured limb, and could not bear an ounce of weight on it. I begged twelve hours' grace for the patient, and the next morning cast him, by putting three hobbles on the three sound limbs, leaving the injured limb uppermost, and selecting for the purpose a quadrangular space formed by four stout trees in an adjoining orchard. Round the trees stout chains were fastened, so that a pulley could conveniently be placed at any given point of the compass. A hobble was buckled above the fetlock of the injured limb, the legs slowly extended by means of the pulleys, and the head of the humerus rolled into the cup. Its adjustment was accertained with a peculiar uneven crumbling noise, and the hollow in front of the shoulder was immediately filled up. In getting up the patient used the limb and walked away, certainly lame, but with comparative ease. A week after the accident the tumefaction had disappeared, and the lameness could only be detected in trotting.

SUBSTITUTE FOR SLINGING HORSES.

By R. H. Dyer, M.R.C.V.S., Limerick.

I believe we are all privileged to make known through the columns of the *Veterinarian* our views relative to any plan which may tend to alleviate the sufferings of our patients, and which may, at the same time, be the means of enabling us to act with promptitude as well as to save expense. I have no desire to say a word in depreciating the use of slings, because I know from practical experience how valuable they sometimes are in special cases; but am anxious to recommend a plan which has been adopted by me for many years past with great success as well as satisfaction. In many instances where slings are indicated it is simply *impossible* to use them, be they ever so perfect, on account of the absence of space, or strength of the upper parts of a stable or cow-house, to say nothing of the absence of such aids. The difficulty of adopting slings in some cases has led me to the substitution of an arrangement, which is easily made by any ordinary carpenter in the course of an hour or two, and can be erected in any place,: Four posts (six inches square is strong enough) are placed in the ground a certain distance apart, according to the size of the animal requiring support, after the manner of an ordinary "trevis." Supposing the horse is three feet wide, then the width should be about four inches *more* between the *side* bars attached to the posts. It is necessary that the trevis (if I may so term it) should be so constructed that the upright parts should be as far apart as the length of the shoulder and hip of the animal to be supported. Everything must be strong of course. When the framework is put together, then a strong piece of canvas, or a common sack, should be nailed upon one of the side pieces, and the animal placed in position. When so placed the sack or canvas must be stretched under the abdomen and fixed to the other side-piece or rail, the head of the animal made fast, and a breast-piece of rope or strap be so fixed that he cannot go forward. Breeching must also be used to prevent backward movement. Padding is sometimes required to prevent abrasion of the integument. I hope this imperfect description of a simple apparatus will be sufficient to be understood by most men. Should any veterinary surgeon wish to erect such a thing permanently, then it would be advisable to have a *roller* on one side of the frame, and an iron pulley, similar to those seen in use in horse slaughterers'

and scavengers' carts, which will admit of any change in the position of the animal when so placed. The several advantages of this arrangement are—the easy method of erection in any place, and at a moment's notice, and the nominal cost of such erection. I have upon many occasions kept horses in such an apparatus for three months. It must be understood that the animal is *not suspended* but merely *supported.* I need not point out to your intelligent readers what cases are eligible for such support, as they will readily recognise these, and they will know how to apply the apparatus in each individual case.

PRIVATE PRACTITIONERS AND THE ARMY.

By "Reflection."

Gentlemen,—In garrison towns it is well known that civilians are occasionally—in the absence of the army veterinary surgeons—called upon to act. Most practitioners have an uniform list of charges for attendance and medicine, which their clients are acquainted with and invariably satisfied to pay. An experienced and successful veterinary surgeon may not conceive that he is entitled or privileged to class himself with those who have attained to eminence in the profession, although he has not been favoured with the title—honourable ?—of fellow ! but he does so from the fact of knowing the estimation in which he is held by the clients who employ him, and the success in the treatment of his cases. If he has proved himself a successful surgeon through a series of years, I think he may justly hold up his head as "a first-class " man. It must be confessed he has not been examined by a board to test his experience in the same manner as army men are examined after a few years' service ; but he has stood a much more severe trial than the army veterinary surgeon if he has had an extensive practice. The *public* seldom make mistakes in regard to the merits of a veterinary surgeon ! *Cramming* will not aid him as a civilian, *theory* is insufficient ; he must be a *practical* man or the public will reject him. If a man has stood the public test for twenty years he may with confidence class himself with those in the highest rank.

When a young man joins the army his pay of ten or twelve shillings a day is considered equivalent for his services. Should he remain long enough to undergo a second exami-

nation, and "pull through" I believe his pay is augmented and he becomes one of the "first class," and ultimately is placed upon the staff, when his pay is again raised. By this arrangement it seems that Government recognises length of service, and the remuneration is raised accordingly. Civilians have similar views with regard to their length of service, and they feel themselves justified in charging somewhat higher fees for their assistance than when commencing practice.

Now to the point, it appears that in some instances the *taxing*, or reduction of charges made by civilians for their attendance and medicine, although their bills have been passed in the ordinary way by the commanding officers and veterinary surgeons of the regiments or batteries, is undertaken by the Principal Veterinary Surgeon. I am credibly informed that *this is an undeniable fact*, and if so, I may ask why? If my memory serves me, there is a note at the foot of the form supplied to the private practitioner for drawing his account, to the effect that the commanding officer or those who sign and counter-sign the bill that the charges are not *exorbitant* but *fair*. If this be so, namely, that the signatures of the commanding officer and veterinary surgeon of the regiment or battery state that the charges are fair, why in the name of common sense are they submitted to any one else? I am strongly of opinion it is an insult to both these officers, and it implies that they are not worthy of confidence! I have been informed that cases have occurred in which other figures have been substituted. It is to be hoped that this is a misrepresentation, because such an act would deserve severe censure, unless the examiner of the charges had proof that the figures were incorrect; and, in such a case, he would be justified in withholding payment. But in such a case the commanding officer must have certified that which he had not troubled himself to inquire into.

Having known a good many army men during my years of practice I have been made fully alive to what is going on in the army. I have also many times done duty for men when on leave; and I am in a position to declare that many improvements are required in the veterinary department, for it is very incomplete. If it be true that there are twenty vacancies at the present moment it does not prove that the veterinary department is what it ought to be.

I could enlarge upon this subject, but will, for the present, cry "halt." My object in penning these lines is for the purpose of bringing before the profession a system which has

been carried on for a long time at headquarters. If civilians possessing the "best repute" as veterinary surgeons are to be called upon to do duty in the absence of army veterinary surgeons, I would strongly advise that their accounts, when passed by the commanding officers of detachments, be paid without being submitted for the express purpose of being reduced, or veterinary surgeons of "best repute" will decline to act when called upon.

Pathological Contributions.

CATTLE PLAGUE.

A REPORT from Taganrog, dated 19th November, states that the cattle plague is reported to have now ceased in Taganrog and its environs, also that only three suspected cases have been apparent in the Berdiansk district during the past month.

Cattle plague is reported to exist in the governments bordering on Austria and Germany, and those adjoining the Black and Baltic Seas, Bessarabia, Volhynia, Podolia, Ekaterinoslav, Kherson, and Tsarkoe Selo of the St. Petersburg government.

A notice from Czernowitz, dated 12th November, states that the admission of horned cattle into the quarantine establishment of Nowosielitza, which is now disinfected and free from disease, will be again permitted after a period of twenty-one days.

A communication from Vienna, dated 19th Nov., states that the cattle plague still exists in Galicia, Bukowina, and Moravia, but has ceased elsewhere in Austria.

A further report, dated 4th December, affirms that cattle plague is extinct in Moravia.

A report from Buda Pesth, dated 3rd December, says that cattle plague has broken out in South Hungary.

A report from the préfet of the district of Jassy, dated 24th October, states that from the 21st of August, when the cattle plague first appeared in some villages in that district, up to the 14th of October, in all the places affected by the disease, 197 horned cattle had been attacked, of which 146 had been shot, 46 died, and 5 were missing.

A report from Galatz, dated 14th November, states that no fresh case of cattle plague had occurred since 7th November.

A further report, however, from Galatz, says that cattle plague exists between Berlat and Vislin.

A despatch from Dr. Dickson, dated 18th November, states that the cattle plague at Gallipoli has ceased since 7th November.

A recent report of an outbreak of cattle plague in Bromberg, near the Polish frontier, is not true. According to our information a case of malignant catarrhal fever occurred in a large farm where no fresh stock had been introduced for seven years. The official veterinary surgeon recognised the disease, but the farm will be treated as a suspected place until all apprehension of the existence of cattle plague has ceased.

PLEURO-PNEUMONIA.

During the month of November pleuro-pneumonia was reported to have existed in the following counties:

Chester, Cumberland, Derby, Durham, Essex, Hunts, Kent, Lancaster, Leicester, Lincoln, (Lindsey) Middlesex, Norfolk, Northampton, Northumberland, Notts, Somerset, Stafford, Suffolk, Sussex, Warwick; York, East Riding; ditto, North Riding; ditto, West Riding; Liberty of the Isle of Ely, the Metropolis, Anglesey, Denbigh, Flint, Merioneth, Aberdeen, Banff, Clackmannan, Edinburgh, Fife, Forfar, Kincardine, Lanark, Perth, Renfrew, Roxburgh.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of November, 1877, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise.

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . . .	Foot-and-Mouth	4	89	...	...	93	Slaughtered under the instructions of the Privy Council.	294	12153	...	2	12449	Slaughtered under the instructions of the Privy Council.
Bremen . . .	Hull	Sheep-Scab . .	...	26	...	...	26	Ditto	...	111	...	...	111	Ditto
Hamburg . .	Hartlepool . .	Foot-and-Mouth	...	7	...	...	7	Ditto	...	216	...	...	216	Ditto
,, . .	Hull	,,	...	4	...	...	4	Ditto	...	119	...	...	119	Ditto
,, . .	London . . .	,,	...	42	...	...	42	Ditto	...	2567	...	...	2567	Ditto
Harlingen . .	Hull	,,	3	5	...	7	15	Ditto	161	189	...	29	379	Ditto
,, . .	London . . .	,,	...	30	...	...	30	Ditto	61	2260	...	...	2321	Ditto
Rotterdam .	Goole	,,	1	...	...	...	1	Ditto	40	...	...	...	40	Ditto
,, . .	London . . .	,,	11	63	...	...	74	Ditto	353	5858	...	3	6214	Ditto
Tonning . .	,, . . .	,,	2	14	...	...	16	Ditto	1090	1223	...	...	2313	Ditto
Total Diseased Animals .		Foot-and-mouth	21	254	...	7	282	Total Healthy Animals .	1999	24696	...	34	26729	
		Sheep-Scab . .	...	26	...	...	26							
	Total . .		21	280	...	7	308							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of November, 1877.

Veterinary Department, Privy Council Office,
Dec. 10th, 1877.

FOOT-AND-MOUTH DISEASE.

During the month of November foot-and-mouth disease was reported to have existed in the following counties:

Berks, Cambridge, Chester, Cumberland, Derby, Durham, Essex, Kent, Lancaster, Liberty of the Isle of Ely, Norfolk, Northampton, Salop, Surrey, Sussex; York, East Riding; ditto, West Riding; the Metropolis.

Facts and Observations.

Consumption of Horse Flesh in Paris.—The Paris Committee for the Propagation of the Consumption of Horse-flesh as Food, furnishes the following information:—During the third quarter of 1877 the Paris butchers of this class of meat sold to the public 443,310 kilogrammes. In the corresponding period of 1876 the quantity was 373,410 kilogrammes so that the increase has been 69,900 kilogrammes.

New Anæsthetics.—Professor McKendrick and Dr. Ramsey have been experimenting with substitution products obtained with pyridine and chinoline. The latter of these bases is extracted from quinine by means of caustic potash, but may also be procured by some of the coal-tar series of substitutions. Three grains of the chloride of chinoline introduced into the circulation of a rabbit rendered the animal unconscious in eight minutes, but the pulsation of the heart continued and the breathing was vigorous. The rabbit recovered after two or three hours, and the experiment is deemed highly successful. Some of the other derivatives from these bases proved to be very powerful poisons, having specific action upon the vital centres, and likely to be of use in the materia medica.—*Medical Press and Circular.*

Science *v.* Superstition in Jamaica. We have been favoured by Mr. Clayton, of Birmingham with a perusal of a communication from Mr. J. Sturge of Monserrat, in which it is stated that in consequence of the impression that acts of poisoning are associated with the increasing belief in witchcraft in Jamaica, the government has appointed a chemist, Mr. Bowrey, to investigate the vegetable poisons of the island. One of the plants examined by Mr. Bowrey has been the *Echites suberecta*, from which he has obtained an alkaloidal salt, one thousandth part of a grain of which is capable of poisoning a cat. The operation was a very unpleasant one in consequence of the pain caused when small particles of this substance came into contact with the skin.

THE VETERINARIAN, JANUARY 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

DISEASED MEAT.

THERE should be no difficulty in determining whether or not the flesh of animals which have been the subjects of disease is injurious to other animals when partaken of as food. Reasoning on the point is practically a waste of time, however ingenious it may be; and whenever the circumstances are opposed to an experimental investigation the question must be settled arbitrarily or it must be left undecided. Direct experiments cannot as a matter of course be conducted in reference to the effects of diseased meat on the human constitution. Prejudice is so strong among men that very few of those to whom meat is a luxury rarely enjoyed would consent to subsist on the flesh of diseased animals; and if they did, the experiment would be vitiated by the disturbing influence of sentiment. Indeed, if two sets of experiments were to be tried, in one of which a certain number of individuals were to be fed on diseased meat which they were led to believe was quite healthy, and another set on healthy flesh which they believed to be from diseased animals, we should expect to see the most distinct indications of the food disagreeing with the latter. The traveller in China who partook freely of a dish which he took to be represented by "quack, quack," suddenly retired from the feast when the attendant described it as "bow wow." Something of this sort would happen if all the diseased meat which is now sold and eaten apparently with impunity were to figure on our tables as pleuro-pneumonia beef, foot-and-mouth disease mutton, or typhoid pork; but set these before the guests without any comment, and as far as can be seen no harm results from their consumption, always presuming that the meat is what a meat-inspector would describe as of good quality; and most certainly the flesh

of diseased animals may be thus described in the majority of cases.

Mr. Simon some years ago stated his opinion that the flesh of animals in the febrile state is unfit for human food, and it must be admitted that this is the correct view for scientific men to adopt. In the absence of satisfactory evidence of the effects of the flesh of diseased animals on human beings any positive statement must be based on the general principle that the healthy sustenance of the body demands healthy pabulum, which clearly cannot be furnished by diseased animals.

With the question of how much impurity in food is consistent with the maintenance of an ordinary state of health the scientific adviser is not concerned, and in answer to the inquiry which is often put to us respecting the fitness for food of the flesh of animals affected with pleuro-pneumonia, foot-and-mouth disease, and other affections of a febrile character, we do not scruple to suggest that the members of the veterinary profession are bound to oppose the idea that that the consumption of diseased meat is sanctioned by sanitary laws. They are not called upon to usurp the functions of the meat-inspector, as we repeatedly contended, but as physiologists and pathologists they are pledged to the advocacy of right principles. They are well aware that the flesh of animals which have suffered from some forms of disease—anthrax, for example—is actively poisonous, and they will act consistently if they decline to sanction the use of diseased meat of any kind under any circumstances.

Extracts from British and Foreign Journals.

THE CATTLE PLAGUE.

A DEPUTATION representing the Central Chamber of Agriculture and the Farmers' Club waited on the Lord President of the Council at the Privy Council Office on the 13th December, to present a memorial praying that legislative effect may be given to the recommendations of the Select Committee of the House of Commons on the Cattle Plague and the Importation of Live Stock. The deputation included Mr. Clare Read, M.P., Mr. P. Phipps, M.P., Mr. W. Stratton, chairman, Mr. Beach, M.P.,

Mr. John Brown, chairman of the Farmers' Club, Mr. St. John Ackers, Mr. J. K. Fowler, Mr. Thomas Duckham, Mr. Thomas Willson, Mr. Bell, Mr. Riley, Mr. Walter Farthing, Mr. W. Lawrence, Mr. Garrett Taylor, Mr. John Treadwell, Mr. Adkins, Mr. E. Hicks, Mr. John Taylor, Mr. Joseph Perkins, Mr. J. Walker, Mr. Algernon Clarke, secretary of the Chamber of Agriculture, and Mr. Druce, secretary of the Farmers' Club.

Mr. Pickering Phipps, M.P., introducing the deputation to the Duke of Richmond and Gordon, stated that they were unanimously of opinion that the food supply of the country had been materially decreased by the importation of foreign disease. Farmers would gladly do all they could to assist in carrying out material regulations, and willingly submit to necessary restrictions.

Mr. Stratton, Wiltshire, stated that the farmers had objected to former regulations because of the diverse authority, that of the borough frequently setting at defiance the regulations of the county. They now asked that some central and powerful body should regulate the movements of cattle throughout the country. Agricultural returns for 1874 showed that the number of cattle then in this country was 10,280,000, and of sheep 34,838,000. Three years later the numbers were 9,730,000 cattle and 32,220,000 sheep, showing a diminution of 550,000 beasts and 2,618,000 sheep. Imports of cattle in 1876, before the cattle plague regulations came into force, were 271,576, and of sheep 41,494, so that the diminution of the home stock was double the importation of cattle, and more than double that of sheep. There had been a continuous growth in the importation of dead meat, which he submitted was the proper mode of supplying this country with food.

The Duke of Richmond and Gordon requested to be furnished with the figures quoted.

Mr. Brown, Cambridgeshire, chairman of the Farmers' Club, pointed out that the existing regulations had proved a failure. Farmers were convinced that nothing short of the slaughter of cattle at the port of debarkation would be effectual against the spread of disease. He denied that farmers wished to return to protection. They wished to be preserved from foreign disease, and he believed the community would reap the advantage in cheaper meat.

Mr. Duckam, Herefordshire, drew attention not only to the rise in the price of meat consequent on the importation of disease, but to the loss sustained by English breeders through the colonial and American markets being closed against them. Better regulations would give the public the advantage of good and wholesome meat.

The Duke of Richmond and Gordon.—I have listened with very considerable interest to the remarks with which I have been favoured by the gentlemen who have spoken upon this occasion, and I need scarcely say that it is a subject matter which has

been under my consideration for a considerable period—(hear, hear)—long before I had the honour of accepting the office I now hold. Intimately acquainted as I am with agriculture in the north of Scotland and the south of England, it is and has been a question which has always received from me a good deal of attention, and therefore it is a matter which is by no means new to me in any way. The cattle plague, as you are aware, made its appearance in this country in January last, and as it did not disappear sufficiently quickly according to our view, the Government determined to take the matter into their own hands. (Applause.) The matter came into the department over which I have the honour to preside, and I determined, if it was possible to do so, that the disease should be stamped out. It was quite obvious that it could not be stamped out without resorting to very stringent measures, and I may say I did strain to the utmost the powers I am possessed of in order to get rid of the disease—(hear, hear)—and I may add with some satisfaction that we did put an end to the disease. It was stamped out. There is now, as far as cattle plague goes, a clean bill of health in this country, and in consequence of that clean bill of health, and in consequence of the Christmas markets taking place in England and Scotland, I have been able to remove those restrictions which it was absolutely necessary up to this time to enforce in order to get rid of the disease. One of the speakers has alluded to the differences which occurred from time to time between the county and borough authorities, and I may remind you that it was in consequence of those differences that when the cattle plague did make its appearance I took the matter into my own hands, and in Lincolnshire I stopped on my own authority large fairs which were going to be held at Lincoln and Boston. I did at that time get some share of abuse for the active measures which I thought fit to adopt. ("Hear, hear," and a laugh.) The outbreak of cattle plague caused the Government to consider the whole question. A committee was appointed to inquire into the question of the disease as affecting the flocks and herds ofthis country. That committee was very carefully selected. It was decided that those who sat upon it should represent all classes in this country, in order that, if possible, the conclusion they might arrive at might have due weight with the general public, and also with the members of the House of Commons, from whom that committee was drawn. I want to declare my dissent from opinions which sometimes prevail, namely, that this is a question which affects one class as against another class—(applause)—because I think, and I always have thought, that this is a question which affects the whole country. (Hear, hear.) It is perfectly obvious that if the producer of stock loses an animal, then the consumer of stock must lose the meat—(hear, hear)—and it is, I think, an unfortunate thing that sometimes this has been made a question which has been called Town against Country and Produce against Consumer. (Hear, hear.) I think that is an

invidious comparison, and prevents one looking at the question in that general and systematic manner which so important a subject requires. (Hear, hear.) The Government have during the recess considered the report of the Committee, and weighed the whole of the evidence which was given, evidence of all classes and all descriptions of witnesses; and from their consideration and review of the subject they have decided that it is their duty to deal with the matter. (Cheers.) Accordingly, I am only now repeating what was said by the Prime Minister to a deputation which waited upon him some time ago ,that it is the intention of the Government to introduce a Bill upon the subject at a very early period of the session. (Hear, hear.) I think you will all agree that it would be impossible for me to enter into any details, or to give any hints of the views I or my colleagues may have. Anything I might let fall would obviously lead to misconception, and I think and hope you will be satisfied with the assurance from me that the subject is one which has received our very serious attention. We shall be prepared at a very early period to introduce a Bill, and I trust the manner in which we shall deal with this subject will be satisfactory to all classes in the country. His Grace concluded by thanking the deputation for the information they had afforded him.

The deputation, after acknowledging the Duke's courtesy, withdrew.

FURTHER NOTES OF EXPERIMENTS AT THE BROWN INSTITUTION ON THE COMMUNICATION OF FOOT-AND-MOUTH DISEASE FROM DISEASED TO HEALTHY ANIMALS.

By W. Duguid, M.R.C.V.S., Veterinary Surgeon to the Institution.

In a report already published in the 'Journal of the Royal Agricultural Society,'* Dr. Sanderson gave an account of some preliminary experiments on foot-and-mouth disease, which appeared to show that under certain circumstances its communication by mediate contagion is more difficult than is usually supposed. In the experiments in question, the infecting material was obtained at Deptford, either from live animals or (in one case) from an animal just slaughtered. In all these cases, the appearances of the disease were so characteristic that, although nothing was known of the previous history of the cases, no doubt could be entertained of their nature.

Opportunity have since offered themselves for repeating the most important of these observations, particularly those relating to the infecting power of the discharge from the mouth. For this purpose material was obtained, not from

* Second series, vol. xiii, p. 204.

infected cattle just imported from the Continent, but from animals in the Metropolitan Cattle Market, reported by the Inspector as affected with foot-and-mouth disease.

As before, three of the experimental animals at the Brown Institution were fed, February 1st, 1877, with hay which was more or less soaked with the discharge from the mouths of the diseased animals. Subsequently, March 22nd, a fourth animal was treated in a similar manner. All of these acquired foot-and-mouth disease; the time of incubation in the several cases being thirty-six hours, two days, two days, and three days, the first indication of the disease being afforded by the increase of bodily temperature. In each case the rise of temperature was followed after one day by the first appearance of the mouth eruption, which, twenty-four hours later, had assumed the vesicular form.

The following Table exhibits the progress and duration of the disease:—

Number of Animal.	Temperature.			Eruption.	
	First Rise.	Maximum Reached.	Restoration to Normal.	First Appearance	Full Development.
I.	48 hours	4th day	7th day	3rd day	4th day
II.	48 „	4th „	7th „	3rd „	4th „
III.	3rd day	5th „	8th „	4th „	5th „
IV.	36 hours	4th „	6th „	3rd „	4th „

The times stated in the Table are reckoned from the day on which the animals were fed on the soaked hay.

The range of temperature was as follows:—

Number of Animal.	Normal.	First Rise.	Maximum.
	°	°	°
I.	101·99	102·5	104·8
II.	101·99	102·8	105·2
III.	102·0	103·1	105·6
IV.	101·55	102·2	104·5

The restoration of the temperature to the normal might be evidently taken in this disease as a good sign of convalescence, for although at this period the scars on the mucous membranes were very obvious, the animals had already begun to feed and ruminate naturally.

On the sixth day of the disease in the animal last experimented on, hay, soaked with discharge collected from the mouth, was given to two other healthy animals (the two three

year-olds), without any effect. It is interesting to notice that although the stableman who was employed in attending on the diseased animals had charge at the same time of four healthy ones, none of them were affected.

In order to obtain information as to the risk of communication of foot-and-mouth disease by litter removed from infected sheds, the bullock No. IV. was littered for eight days (*i.e.* the whole time of their illness) with the straw removed twice a-day from Nos. I., II. and III., but it did not show any signs of infection.

The promptitude with which the same animal was attacked several weeks after, when fed with soaked hay, proved that this immunity was not dependant on insusceptibility. Finally the two remaining animals not used in previous experiments were littered in a similar manner with the straw removed from No. IV. during the whole time of its illness, but again without effect.

TEXAS FEVER.

By John Myers, Sr., V.S., Cincinnati, Ohio.

The daily news are now circulating reports of the so-called Texas cattle plague prevailing in Cleveland, and in some parts of Michigan. This put me in mind again of an article on the same subject I had written, and intended for the *Repertorium der Thierheilkunde*, that journal having several times referred to the disease. The delay of transferring it to its contemplated destination is due to the intention of adding to the description, if possible, a more diagnostic value to the analysis of the blood, but we have not, to the present time, been able to procure any, as the disease has not made its appearance since in this vicinity. Now, the article does not correspond altogether with the present state of affairs, but I will submit it just as it was composed at that time to the 'Review,' the standard messenger of the interests of American veterinarians, to disclose if agreeable.

The scrupulous management of the sanitary police ordination on the eastern continent partly, and partly the contemplated exportation of American cattle induced me to draw the attention of the veterinary medical profession to this enzootic, viz. Texas cattle plague, Texas fever, Spanish fever, and splenic fever, the propagation of which is thought to be produced by contagion. The virus generated within

cattle of the Gulf region (being endowed with mysterious properties), which is transferred by them in the eastern and central States, where they deposit and diffuse the malady amongst the cattle with which they come in contact, whilst their own health remains unimpaired.

Considering these circumstances, it is quite probable that the authorities of such districts in which foreign cattle are unloaded will enforce protective measures against the invasion of plagues, and, moreover, should one or more amongst a lot of these bovine emigrants prove indisposed, which is very likely the case when such dumb animals that have never been incarcerated before are doomed to a fortnight's rail or sea journey, they would make their inspection with even more precision. As to what extent such sanitary precaution is necessary, the here deposited facts in reference to the disease may be taken into consideration. Incomplete as they are, I deem it justifiable to communicate fragments, expecting by these means to stir up scattered relative substance which might in the end serve as a foundation of trustworthy instruction as to how this evil might be prevented and cured.

Symptomatology.—This disease compared with, or even taken for, anthrax is characterised by a painless evacuation of a reddish-black, sometimes coffee-coloured, turbid not always abnormal odoured urine, which after standing for twenty-four hours forms a brick-coloured precipitate, which is sometimes streaked with blood. It appears to me credible, if not indisputable, that this morbid condition belongs to the acute decomposition of the blood (sepsis sanguinis), which signalises itself principally through the abnormal coloured urine, undoubtedly owing to some liberated hematin and globulin. It makes its appearance in the hot summer months. At the same time the secretion of milk is suspended, which phenomena is the first to attract the owner's attention. Rumination is also suspended, the food is rejected, and the desire for water is moderate. The patient remains isolated from the herd, with head pending, ears drooping, a viscid salivary discharge from the mouth, mixed with mucus from the nose; muzzle moist; running at the eyes, though not constant; conjunctiva pale, making the traversing vessels look prominent but not engorged. At the outset the temperature is heightened, then varies, and eventually lowers. In standing posture the limbs approach each other; in a recumbent position the limbs are flexed, the head extended with the inferior maxillary resting on the ground, and if an unsuccessful attempt is made to get up,

the animal recedes back upon its side. During the first stage the gait is dragging, gradually getting unsteady, and at last altogether impossible, indicating a complete collapse of the nervous and physical force. The mucous membranes, particularly that of the buccal cavity, present a greyish hue; deglutition sometimes impaired; fecal matter at the outset soft and occasionally streaked with blood, the colour depends upon the previously consumed food, and if the patient lingers any number of days the consistency is changeable. Peristaltic movements sluggish; never observed colicæ pains. The frequent respirations are sometimes accompanied by a cough and groans, without any forcible assistance of the abdomin and thoracic muscles. In the majority of cases the circulation keeps pace with the respiratory acts numbering 80, 100 to 120 per minute, and as the pulse increases it loses in tonicity. The action of the heart is, in general, scarcely perceptible. Specimens of blood cirea, two thirds of a pint, withdrawn from the jugular vein, resembled more arterial than venous blood, coagulated within ten minutes, separating a reddish-yellow tinged serum. It is understood that the complexity of the symptoms is not at all times alike, being dependent upon the progress of the case. The most important diagnostic symptom is the character of the urine, but since we are unable at all times to be present personally, the history of the case as given by the attendant (however unreliable at times) must suffice, and is indispenable unless previous cases appeared in like manner, which, of course, must be traced in the same way.

Autopsy.—In one case I observed a *post-mortem* rigidity which I did not notice in others. Tympanitis as well as emphysema I observed only in such animals as had been dead for several hours; whilst in those having just expired collapse of the abdominal cavity was found. The blood-vessels of the subcutaneous tissues were very seldom engorged. In some cases the muscles were pale, and in others bluish-tinted. The adipose tissues usually presented a healthy aspect, though in some cases they were icteric. The abdominal cavity usually contained from one half to one pint of serum. The external appearance of the stomach often deviated from the healthy state; its surface in relation to the liver and spleen partook from the former a yellowish colour, and from the latter a sanguineous hue.

The contents of the rumen were nearly always voluminous; the reticulum partly or totally empty; the omasum filled with the usual quantity of dry food, in few exceptions, however, empty; and the abomasum contained mostly an offensive

musty mass. The contents of the ileum, cæcum, and colon in nearly all cases were of a like offensive character; often dry, bloody fæces met with in the rectum, unless death occurred during purgation. The external appearance of the alimentary canal seldom bore any evidence which would indicate the condition of its inner aspect; the discoloration of one or other organs, permeated with a yellowish tinge, are the most frequent superficial appearances. The mucous lining of those destroyed presented an inflammatory character, whilst in those that died it was partially detached, of a greyish hue, the denuded muscular coat congested, Peyer's patches were more voluminous and livid, and the lining of the small intestines coated with bloody mucus. The internal coat of the large intestines and a portion of the ileum often presented circumscribed greyish-green or yellowish surfaces, with gangrenic odours, the destroyed were void of the latter change. The liver of those destroyed in the second stage was merely enlarged, indicating an acute or subacute inflammatory character; in those that died it was generally found to be undergoing decomposition; the colour of its exterior was either of a yellowish, brownish, or brick colour; the veins traversing the liver contained a scanty quantity of blood of a purplish hue. The gall bladder was usually filled with a dark-coloured bile of the consistency of honey, or a more normal fluid of a yellow, greenish colour. The spleen in destroyed cattle was enlarged, its texture but slightly altered, in fact merely in a hyperæmic state; in those that died it was more voluminous, emphysematose, pulp semifluid and viscid, analogous to decomposed blood. The lumbar and iliac glands in two cases I found considerably enlarged and in a decomposed state. The colour and texture of the kidneys varied, the parenchyma of those destroyed at the outset presented a hyperæmic, slightly swollen, dark red, but compact appearance; while of those that died it was quite black or dark grey, flabby, and seemingly at the point of dissolution. The bladder, in the majority of cases, was filled with a blood-red or a coffee-coloured urine which readily responded to the tests for albumen, the mucous lining relaxed without evidence of inflammation. Lungs generally healthy, a few exceptions showed that the inflammatory pathological deviations were caused by irrational drenching, which fact could be traced up to the larynx. In such cases not only the lining of the trachea, but also the adjacent muscular and cellular structures, were infiltrated with blood. Heart pale and flaccid. In one case the endocardium was ecchymosed on the right, in another on the left, and in the third on both sides; in

those that died it contained ash-grey or dark-coloured fibrinous clots. With few exceptions the pericardium was the reservoir of several ounces of serum. The vena cava usually contained small remnants of blood clots, some of which, however, on account of their consistency and discolouration, might have been taken for pathological products had not the topography of them been given.

The analysis of the blood undertaken by order of the Board of Health remained without result. In order to satisfy my own curiosity, I requested an expert to examine such blood microscopically (suspecting blood changes, such as anæmia, leucemia, and the like), but he informed me naïvely that he was only acquainted with the analysis of human blood. The symptomatology of this disease as described in the handbooks at my disposal differed with my cases, therefore I was more anxious to know with what I had to deal. I did not pursue my efforts any further at that time, as I was in hopes of very soon obtaining fresh blood in order to have it analysed through some one else, but have not since succeeded in obtaining any.

The progress of this disease is a speedy one, the majority of the animals expiring within two and a half and four days; in exceptional cases they may linger for seven and eight days. The course seems to be governed by the variation of temperature; I, at least, observed that those attacked in the months of July and August took a more rapid termination than those taken sick in September.

Etiology.—Some individuals claim that the disease is a mystery; others assert that it originates by direct contagion communicated by cattle transported from the Gulf regions. Cases have come under my observation in which I have been unable to trace any contagion, and to all appearances the malady assumed a spontaneous origin. For this reason I cannot agree with the aforesaid assertion unconditionally, although we have sufficient proof that cattle running at large, or in pasture where they may come in contact with the Texas cattle, are more readily exposed to infection than those kept in stables from May until October exclusively. Cattle are also less susceptible in wet than in dry seasons, when the scarcity of fresh, good water compels them to quench their thirst with stagnant water. Numberless infusoria and other ingredients deleterious to health are thus conveyed into the system in this way, the result of which is a contamination of the chyme and blood. Besides, the withered grass consists of non-nutritious and even toxic vegetation. As the animals desire to refresh themselves with something cool and juicy, they will

eat plants and drink water which at other times they would refuse, thereby infecting the alimentary canal and its associate organs. The injurious effects do not confine themselves to the vascular system alone, for the functions of the organs of the abdominal cavity, which are instrumental in the formation and purification of the blood, become impaired as soon as these obnoxious ingredients arrive for transformation or elimination, causing detrimental results not only to the glands themselves, but to the whole vital organism. Under favorable circumstances these causes may be sufficient to develop infectious germs, giving impulse to spontaneous cases. Companions living under the same hygienic condition multiply and disseminate the virus whenever they arrive amidst the mature bovine inhabitants of the hills, as well as those in low lands, valleys, creek and river precincts, and particularly in districts influenced by the tide.

Whether the infective principle is fixed or volatile, and what its *modus operandi* is, remains to be yet ascertained. Considering the locality where the disease appears most frequently, we are obliged to pay tribute to miasmatic influences. The evidences we have lead us to believe that the system of Southern stock must be impregnated with the effluvial atmosphere prevailing in that climate. This may account for the inviolability of themselves, and tenacity of the virus which our native stock inhale from their excrements. Even the expirium may be charged with poison, and will act as such in the first summer if they change their homes to any of the north-eastern States. It is also claimed that they are subject to infection after being acclimated.

Not having anything essential to add to this miasmatic topic, I do not hesitate to acknowledge my predilection that the germ theory embraces the most plausible explanation for the enigmatic rapid dying away of whole droves, dairies, &c., within a week or two. Innumerable statements of such mortalities are recorded in agricultural reports and periodicals; but the sporadic cases, which are fully as important as to whether they are contagious or non-contagious, are almost entirely ignored, as in such instances pecuniary loss is estimated more than science. To prevent the former it is necessary in the first place to examine thoroughly into the causes and nature of the disease, a problem which is yet to be solved, and must not be neglected if prophylactic measures are to be instituted and expected to prevent such calamities. My experience as to the period of incubation has not familiarised me enough with its varying circumstances to

give a decisive judgment. Two days to five weeks seem to be the average time the poison requires to develop the disease.

Prognosis is unfavorable, especially in midsummer.

Treatment.—No administered remedy as yet has given any satisfaction. The salicylic and carbolic acids, with some slimy infusions, seldom seem to do any good. Bromide potas., with glycerine extr. Eucalyptus glob. and water, proved to be no better than ordinary agents, nor did quinine give any more favorable results. Bathings of the abdominal regions with warm water, mustard, or red pepper, were also resorted to. I must, however, admit that my therapeutical experiments were unsatisfactory. The rapid course of the disease and lack of time to give the proper attention to the action of medicines frustrated a systematic procedure.

Calves and other ruminants have proven to be exempt from the disease. A superficial glance at this view of the infirmity will reveal at once that the analogy with anthrax is untenable. But, still, Mr. Fleming in his excellent work on sanitary science and police, favours this idea. I also express doubt as to paragraph 4, page 212, see vol. (Mr. Fleming's), which reads as follows: "Animals receiving the infection from Southern cattle do not communicate it to other natives, &c." I have no positive proof of the reverse, but to caution interested individuals I deem it necessary to cite two instances which will not correspond with the assertion of Mr. Fleming, namely, two years ago (midsummer) a farmer, Mr. Anderson, near Hamilton, Ohio, made a contract with two drovers to supply him with neat cattle, *home breed.* They filled their engagement with two lots. The second transport arrived two weeks after the first. Two days after the second lot arrived, one of them took sick and died. Twenty-four hours after, one of the first supply had its turn and died in two days. From this time on, one or two stepped out every day without distinction of the two supplies, until the drover took away the remaining ten of the last lot, the others apparently mending. A repetition of the same occurrence took place at a distillery in my neighbourhood. All went well until the second division was installed, when sickness set in, but owing to the low temperature which came to their rescue only four per cent. were lost. In this last instance we see the malady break out in the stable among animals fed on hay or corn swill (seldom heard of). In both instances the native cattle had been apparently disseminating the ailment amongst themselves. Not having any evidence as to whether one or all have been infected by the Texas stock, I leave it to others to make their own comment.—*American Veterinary Review.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Monthly Meeting of Council, Dec. 12th, Col. N. Kingscote, C.B., M.P., President, in the chair.

Report of the Veterinary Committee.

Mr. T. C. Booth reported that during the past year the members of the society had used their veterinary privileges as follows:—Six consultations by letter, three *post-mortem* examinations, and two consultations requiring visits from the inspector. The committee moved for renewal of the veterinary grant of £250 for 1878. The committee had met five times, and made five reports. They recommended that the following constitute the committee for the ensuing year:—Viscount Bridport, Sir M. W. Ridley, Mr. Arkwright, Mr. Booth, Dr. Carpenter, Mr. Duguid, Hon. W. Egerton, Mr. Brandreth Gibbs, Mr. Harpley, Mr. Howard, Colonel Kingscote, Mr. Milward, Mr. Chandos Pole-Gell, Dr. Quain, Mr. Sanday, Dr. Sanderson, Prof. Simonds, Mr Wakefield, Mr. Wells, and Mr. Jacob Wilson. This report was adopted.

Dentition of Pigs.

Mr. Stratton moved the following resolutions, of which he had given notice, viz. the abolition of the following rule relating to pigs:—"19. If a litter of pigs be sent with a breeding sow, the young pigs must be the produce of the sow, and must not exceed two months old." Also the following paragraph of rule 18:—"All pigs exhibited at the country meetings of the society shall be subjected to an examination of their mouths by the veterinary inspector of the society; and should the state of dentition in any pig indicate that the age of the animal has not been correctly returned in the certificate of entry, the stewards shall have power to disqualify such pig, and shall report the circumstance to the Council at its ensuing monthly meeting." Also in rule of adjudication No. 6, to strike out the first paragraph, viz.: "The attention of the stewards and judges is particularly called to the conditions applying to pigs. The senior steward of live stock is requested to report any malpractices on the part of exhibitors, and any person found guilty will not be allowed to exhibit at future meetings of the society;" adding the following: "Any person objecting to an entry on the score of age, or on the ground of such entry being made otherwise than in accordance with the society's rules, shall make his objection in writing to the secretary of the society, not later than 5 p.m. on the second day of the show, and shall at the same time deposit the sum of £5, which shall be forfeited to the society in the event of the objection being considered frivolous by the Council. Every

objection will be carefully inquired into by the stewards and Council, and any person found guilty of malpractices will never again be permitted to exhibit at the society's shows." Mr. Stratton referred to the disqualifications of pigs which had been made for several years past, and which of late years had become so numerous. Last year, at Birmingham, no fewer than seventeen pens had been disqualified, and some of them had been exhibited by noblemen and gentlemen bearing the best names in England. Dentition had been accepted as a standard to judge of the age of pigs, and he had no doubt that the society's veterinary surgeons had applied that accepted standard, but he thought that mistakes might occasionally occur. He judged that it was for this reason that the Birmingham Exhibition Society had abolished a similar rule, and that the Smithfield Club had relaxed its provisions. All breeders of farm stock would admit that occasional exceptions would occur; and he held it to be wrong that one innocent man should be punished to enable the society to capture a number of guilty ones. The society, moreover, said that they did not deem the exhibitors of disqualified pigs guilty, but only negligent, but he thought that the public would regard those men who were disqualified as a set of rogues. In his opinion, under the present circumstances, the guilty were not punished, but the innocent were. The society itself could have no confidence in its own system, or it would be much more stringent in enforcing its provisions and in dealing with those who transgressed them.

Professor Brown observed that, so far as Mr. Stratton's point of view was concerned, he had very fairly stated his case. The advocates of the dentition test had never claimed infallibility, and it could not be expected that any animal would carry in its mouth an authentic certificate of the date of its birth. It was well known, however, that the dentition of pigs undergo very remarkable changes at certain ages of the animal, viz. at six, nine, twelve, fifteen, and eighteen months old. This had been thoroughly described by Professor Simonds many years ago in the society's *Journal*. The pig was, however, differently constituted from other animals of the farm. The dentition of cattle frequently exhibited remarkable divergences in reference to age, and so also did that of sheep. An exhibitor of pigs, who had been disqualified on account of dentition, might be regarded as having gone very far beyond a certain limit; and many exhibitors openly state that if they show pigs honestly they have very little or no chance of obtaining prizes, but that as a general rule they keep pretty close to the actual ages. Veterinary surgeons did not pretend to be able to tell the age of a pig to a day or a week, but there are certain indications as to dentition which never occur until a definite time preceding each of the ages just mentioned; and it is only within this limit that the veterinary inspector can be cheated. It is possible that an innocent person may occasionally suffer, but he denied that this

should be any reason that the society should not prevent a large number of other exhibitors from being more guilty than they now are.

Mr. Mafsen referred to the fact that the Bath and West of England Society had altered their rule so as to put it in the power of the judges to call in the aid of the veterinary inspector if they wished it. He thought that this society's rules might be altered in the same sense, and he gave instances, derived from his own experience, of the large amount of variation there is in the development of the dentition in sheep.

Mr. Jacob Wilson expressed his conviction that many exhibitors forget the conditions attached to their entry of pigs. He would remind such exhibitors that they certified not only that the pigs entered are of a certain age, but that their dentition shows it. He would not relinquish the efforts of the society to prevent fraudulent exhibition; and he would further make it a rule that two years' consecutive disqualification should entail a prohibition upon that exhibitor from again exhibiting at the society's shows. He was also of opinion that if other societies had the same rule as the Royal no complaints would be made.

Professor Simonds stated that the existing system had its origin at his suggestion twenty-five years ago, in consequence of the gross frauds which prevailed at that time. Before these rules were drawn up he had taken enormous pains to ascertain whether the dentition of pigs presented better indications of the age of the animals than did the teeth of sheep, cattle, or horses, and at the time he was surprised to find that there were great regularities at certain well-marked periods in the life of the pig. He had studied this subject exhaustively, in slaughter-houses as well as elsewhere, and had originally tabulated the dentition of more than 500 pigs, and classified them according to their ages and their dentition. The important changes which had been referred to by Professor Brown were well known to take place at definite intervals of three months, until the pig became eighteen months old, and, as their "classes" were now constituted, pigs above that age were not so frequently brought into competition. He could recollect that before these rules were drawn up, and soon after they were first brought into operation, pigs of eighteen months old and upwards were frequently exhibited as under a year old. The present system had been in operation at the society's shows for twenty-five years, and had been universally accepted by veterinary authorities in this country and on the Continent for nearly as long a period, he trusted therefore that the society would not lightly abolish it.

The President suggested that the existing rules might be made somewhat less stringent, and that the Stock Prizes Committee should confer with the veterinary authorities with that view.

Mr. Brandreth Gibbs suggested that the state of dentition required in each "class" of pigs should be described in the prize sheet.

After some explanatory remarks from Mr. Stratton, he withdrew his resolution.

A letter on the same subject was read from Mr. Richard Fowler.

GENERAL MEETING OF THE SOCIETY.

Thursday, Dec. 13th, 1877.

EXTRACT FROM THE REPORT OF THE COUNCIL.

The experiments upon pleuro-pneumonia and foot-and-mouth disease have been continued during the year at the Brown Institution, under the superintendence of Dr. Burdon Sanderson. Valuable indications have been obtained, and described in the reports already published in the *Journal*, and in the agricultural newspapers; but before these can be accepted as final they will require careful confirmation. The Council have renewed the grant for these investigations, the scope of which will next year be extended to quarter-evil and diseases of a similar nature.

CENTRAL VETERINARY MEDICAL SOCIETY.

MEETING, *November 1st*, 1877.—PROFESSOR AXE, in the Chair.

The Chairman.—Gentlemen, the first duty which devolves upon me is to thank you for the distinction you have conferred upon me by electing me your president. Whether I owe this distinction to your kindness, or to my individual position, or in some degree to both, I feel much gratified, and still further encouraged by the consciousness that my name met with your unanimous approval. It is needless for me to say that there are many members of this society who have been associated with it since its origin and who, by virtue of their age and experience, are much more capable of fulfilling the duties which arise out of the business of an association like this than myself. I nevertheless feel that, although others may have higher claims, that it is the duty of each and every one of us when called upon to minister to the interests of the profession, either directly or indirectly, to answer to the call of his brethren. It is not, however, with any idea that I can accomplish all the services which you will desire of me in as efficient a manner as my predecessors have done that I accept this office. You have had in this chair men of very considerable experience, men of years and sound discretion, and men of considerable learning. You will, therefore, I trust, bear with me should I, through many shortcomings, not meet your entire expectations. However, it will at all times be my first consideration to faithfully discharge the duties which I have undertaken, and which will arise out of my official capacity; and I venture to hope that at the expiration of this session you will be able to give my services your approval, and that I shall not at that time require one word of condemnation. I hope, moreover, by virtue of the appointment which I have the honour of filling, that I may be able to add interest to and enhance the value of our meetings. In

this direction I shall at all times make the greatest efforts, and I hope that at the conclusion of my presidential career those efforts will have met with your sanction and your good word. Gentlemen, I will not occupy your time further by referring to anything in connection with the history of this society or the profession. I hope some time before the expiration of the session to call your attention to its position and prospects. That I will do with your permission in a formal manner. I beg again to thank you for the honour you have done me in electing me as your president. (Applause).

The Secretary then read the minutes of the last meeting, which were signed by the president.

The Secretary read a letter from Mr. Thomas Walley.

Mr. Gowing, sen., said that it would be recollected by some present that their late lamented friend Mr. Field, jun., had laid before the association a case which he explained at the time, and also submitted some specimens showing a morbid condition of the bowels. The specimens were considered of an interesting character, and referred to a committee for microscopic examination. Since that time he had not had the opportunity of attending the meetings, and consequently was not aware of any comment made on the case. Why he referred to the matter was, that Mr. Field at the time laid particular stress upon one diagnostic symptom which was present when he saw the animal, namely, that one fore foot was extended and the other was brought more under the centre of gravity, and also that the horse was looking round persistently at his flanks. That symptom was a mere indication of pain. An animal will try to get round and show where the seat of pain may be, and until the muscles are put into position to enable the animal to do so he cannot get so near the seat of pain as he otherwise would do, and if both feet were in a natural position he could not get the head so far back ; therefore the action referred to merely showed the seat of pain to lay in the abdominal region, but this could not guide to a true diagnosis of the case. He recalled to mind a case like the one alluded to, although differing somewhat widely in reference to the seat of disease, but presenting the same symptoms. He was requested to see a tradesman's cob which was said to have gripes or colic. When he saw it it was in the same position as that Mr. Field had alluded to, viz. looking back at his flanks, the off leg extended, the near leg brought more under the centre of gravity, and the animal persistently looking towards his flanks He would not alter that position unless he was disturbed. When he went to the animal there was an anxious expression indicative of pain ; the action of the heart was not much altered, and the visible mucous membranes did not present any inflammatory blush. He was at the time undecided as to the true cause of the animal's suffering, but he considered it was not spasmodic colic. There was no tympanitic condition of the flanks, nevertheless he thought it necessary to make an examination of the rectum. On placing

his hand on the off side of the gut he found there was a perforation, through which he could get his index finger. This made the cause of suffering apparent. He made further inquiry, and found that a person had been attending the animal in the early stage of the disease, and had used an injecting pipe (it was rather a narrow pipe) to throw up an enema, and he presumed that in doing so the rectum had been punctured.

The horse stood in an analogous position to that described by Mr. Field, and although the cause of the disease was differently situated, yet the same train of symptoms were present, and only indicated pain in a particular region. He should not detain them long in regard to his treatment. He first removed the fæces from the rectum, and after doing so, injected some tepid water to wash out any remaining fæculent matter, and then a small quantity of tepid water with opium was thrown up as an enema, which was retained. The horse was put on a bran diet, together with oatmeal and linseed-tea, and an opiate enema was given a second time, but no other treatment resorted to. The second day the animal was more composed, the head was carried in a natural position, and the animal ceased to look back at his flanks. His previously anxious look had also disappeared. From that time nothing more was done than administering an occasional enema, trusting to nature's laws, and in ten days the horse to all appearance was well, but the healing process was not completed. In a few days he went to see his patient, and to his great surprise found he had been taken to work. He lost sight of the animal for some time, but he afterwards saw him and found that he had been kept to his work for three years, and was doing well. He mentioned it as a case, not of any particular interest, but as showing that they could not depend upon the particular symptoms to which Mr. Field had alluded as diagnostic of the organ diseased, but must consider them as being merely indicative of pain in a particular region.

Professor Axe thought Mr. Gowing had put the case about as forcibly as it could be, and presumed, that his object in repeating the circumstances in connection with it was to show that lesions in different parts of the abdominal contents would give rise to symptoms of precisely the same character. Such cases went to confirm the impression that there are no special symptoms when animals are suffering from internal abdominal lesions which point to the precise organ or the exact part of an organ involved.

Mr. Wragg said the case he was about to relate was one of apoplexy, and he thought it interesting enough to justify him in laying it before the meeting. His patient was a cart gelding six years old. It had been under treatment for three weeks for sore throat, and had discharged freely from the nose, but these symptoms had passed off. His attention was called to him in the morning of the day of his visit as the animal had refused his food. He found him in a stall, standing back from the manger

with his head hanging down very low, the pulse at 40, but very full and strong. When taken out of the stall and led along the stable, he reeled very much, showing that he had partially lost the use of the fore legs, and had very little motive power. He had him brought to the infirmary and placed in a loose box, and administered to him a stimulant. The man said that as he brought him along, he reeled about very much and stumbled, and he had a great deal of difficulty in getting him there. He nearly pitched on his head several times. In the afternoon he was noticed to fall down in the box, but he struggled up immediately. About 6.30 he heard him fall down in the box again, and went to him, and found he had pitched on his head against the door with his inner fore leg doubled under him. He had him pulled back into the middle of the box into a comfortable position, and then found him perfectly comatose, the eyes wide open and fixed, the pupils dilated, the pulse at 40, very strong, the breathing sterterous, respirations 4 to the minute, temperature 104$\frac{2}{5}$°. He was lying down with his legs stretched out as if dying; in fact, but for the pulse and breathing, he should have thought he was dying. About 8.30 the pulse became very irregular numbering 80, 55, and 70 beats in the space of five minutes. That made him come to the conclusion that the animal had disease of the heart in addition to apoplexy. He continued to lie in the position described, only occasionally moving his fore or hind limbs, till about two o'clock the next morning. During the evening he first had given to him some hydride of chloral per rectum, and he also took two draughts containing stimulants. These were given by the pump. He was fearful of giving medicine in the ordinary way lest it should pass down the trachea. About one in the morning the pulse was 120 and had become very feeble; the temperature fell to 102°; the respirations were 3 in the minute, and before death gradually dropped to 2 in the minute, the animal dying very quietly and scarcely moving. He made a *post-mortem* examination eight hours after death and found the heart unusually large, much softened, and weighing sixteen pounds. Fatty degeneration had evidently taken place. The valves were diseased, and they had a thin coating of fibrinous matter on them. The liver also was much softened, its structure being easily broken down. On opening the cranium about two ounces of serum escaped; the brain was very soft and of a yellow colour, the vessels were large and very distinct, showing that congestion was present. On dissecting the brain, a clot about the size of a bean was found on the choroid plexus in the left lateral ventricle. He came to the conclusion that, in consequence of the hypertrophied state of the heart, the blood was sent into the cerebral vessels with increased force; the vessels themselves, probably having undergone fatty degeneration and become weakened, were unable to resist the pressure of blood and became ruptured. It was a very interesting case to him, and he should be pleased to hear any remarks made thereon.

Mr. Gowing, sen.—Was he to understand there was rupture of the vessels of the brain?

Mr. Wragg.—There was a clot of blood on the brain on the choroid plexus.

Mr. Gowing.—Was the animal in a comatose state?

Mr. Wragg.—Perfectly.

Mr. Moore, sen.—No doubt the animal would struggle a good deal at times?

Mr. Wragg.—He lay perfectly still.

Mr. Moore.—That was after he was not able to stir. Was there any disease in the bones of the cranium?

Mr. Wragg.—No, not that he had observed.

Mr. Moore had seen such a case arising from a horse knocking his head against the lintel of the door, which was too low. That had produced violent fits. He thought the probability was that the horse referred to had received an injury to the brain. As to the affection of the heart, the two would go together and produce the symptoms mentioned.

Mr. Clark.—That would be a case of direct concussion of the brain, and then some evidence of injury would have been shown.

Mr. Wragg.—There was deposit on the choroid plexus of a sanguineous kind.

Mr. Clark.—Not granular?

Mr. Wragg.—No.

The Chairman.—One point he thought it well to refer to with regard to the cerebral symptoms. It was a very common occurrence in cardiac disease, and in cases where there were fibrinous accretions on the valves, for fragments of the fibrinous matter to be freed, and being set at liberty in the circulation plug up the small vessels in the brain. Under such conditions softening of the parts and ultimate rupture would be the result, and he thought that in the case recounted there existed a chronic disease of the valves of the heart, resulting in fibrinous accretions upon them, and that some of the granulations deposited upon the valves had been set at liberty, and had become lodged in the cerebral vessels.

Mr. Wragg.—Did the chairman consider this to be a common case?

The Chairman.—No, not absolutely common; but such brain lesions are uot unfrequent results of valvular disease.

Mr. Clark.—The president, he apprehended, wished them to feel that they should not always look to one lesion as being the sole cause of death, but to use diligence and make in remote parts further search, and ask themselves the question whether the disease was primarily in the brain, or depending on some chronic condition of an organ remote from the brain.

Mr. Wragg.—He had no doubt in his own mind that the horse in this case had died from heart disease, and that apoplexy was the consequence.

Mr. Jarvis referred to a case as follows:—The subject was a brown carriage gelding, apparently about sixteen or eighteen years of age. When called to see him he found the submaxillary gland enlarged, and an enlargement of the anterior part of the superior maxillary bone, about the size of a large egg, raised in the centre, but not pointing. On examining the mouth he found two teeth loose, the third and fourth molars. Occasionally, and especially when the head was held down, a quantity of discharge came from his off nostril, very like albumen or white of egg, sometimes about an ounce and sometimes as much as two ounces coming away at a time. Once or twice it seemed streaky with pus, but, as a rule, it was clear, and it would sink in water. The smell was very disagreeable and strong. You could smell it as soon as you opened the stable door. The animal's appetite was good, but he could not masticate very well, and held his head on one side after taking food into his mouth. There was no tenderness on pressure. His general health was good, but his coat had a very staring, unthrifty look. His pulse and respiration were natural, and his legs did not swell in the least.

Treatment.—The horse being an old favourite was placed under treatment. He was first cast, and the third tooth being loose it was extracted, and then the fourth afterwards, as it also was loose, leaving the fifth and sixth moderately firm. A hole was then made from the centre of the enlargement on the face into the cavity left by the teeth, through which was daily injected a quantity of warm water, and then medicated injection of Cup. Sulph. and creosote, also of carbolic acid and water. The horse took tonic medicine, and his diet was restricted to steamed oats and mashes and scalded chaff and hay. He was kept under treatment for a fortnight, with no alteration for better nor worse, and his owner being informed of the probable unfavorable result, and the expense of a long treatment, consented to have him destroyed.

On a *post-mortem* examination the near side of the head was found healthy. The superior turbinated bones on the off side were filled with semi-fluid pus, and the fifth and sixth molars had fallen out.

Mr. Gowing.—Was there any discharge?

Mr. Jarvis.—Yes, a very great discharge; it was a case in which, if not very clearly looked into, would have been taken for glanders.

Mr. Gowing.—The palate bone, I observe, is all eaten away.

Mr. Clark said it was only two or three days ago that he sent a report of a similar case to the College for the assistance of the students. He happened to know the history of the animal in question, which had been under his notice for three years. There was a disagreeable discharge from the nostrils; it was so bad that it made the stable unbearable. At last the men complained of it so much that the General Omnibus Company, to which the horse belonged, sent him the horse. Although the animal was in a healthy state he advised Mr. Church not to work him, at the

same time he offered, if they did, to arm the coachman with a certificate in case the policemen should stop the animal. A few weeks ago the horse was discharging from the eye, and the facial bones pointing so much that he had a great mind to trephine him. Taking a gimlet, however, he made a crucial incision, and he had scarcely got the point of the gimlet in, when out came a quantity of pus. That incision, he might say, he had made for investigation only. He had sent the head of the animal to the College, thinking it would be useful to the students, and that Professor Pritchard might show the gentlemen there the way they distinguished things, so that they might not come to a hasty conclusion as to the existence of glanders.

The Secretary said that while he had been in Edinburgh he was at Professor Williams', and there saw a horse which was the subject of diseased teeth. The professor had adopted a rather forcible means of extraction. He introduced a chisel in the zygomatic ridge and punched it out. He had a horse which he had submitted to that treatment, and from which he expected the best results. The breath had become exceedingly sweet. The tooth was of the ordinary length, and did not appear much diseased. It was not the first case he had operated upon with similar success. At the time it had struck him, as it probably would the majority of them, that the attempted remedy must be more powerful than the result would lead them to anticipate. He thought the horse would become a quidder.

Mr. Clark.—If he lost two or three of his molar teeth he would become a very bad quidder; he would not be able to fill his stomach with food.

Mr. Gowing.—Diseases of the teeth were not at all uncommon, particularly in old horses. Absorption of the fang of the tooth frequently gave rise to further disturbance. In that case the teeth become elongated, and there was a loss of attrition. The animal could not masticate on one side. He had had several cases of that kind. One in particular, a horse belonging to Mr. Bush, a neighbour of his in Camden Town. The animal had softening in the bones of the face, with a nasal discharge, which gave rise to the supposition that he had glanders. He said it was no such thing. The animal was sent to the College for an opinion, which bore out his own. The parts were sent to him, and he made an examination. Some of the alveoli were destroyed by disease, and many of the teeth were loosened. There was a great deal of structural change in the molar teeth. The extraction of teeth was sometimes difficult; he had paid a good deal of attention to the matter, and had invented certain instruments for the purpose, and had been successful in some cases where, perhaps, he might have failed if instruments had not been at hand. But he regretted to say that the instruments he had already invented or prepared were not suitable for every purpose connected with diseases of the teeth. There were some teeth you could not possibly extract. Those who knew the anatomy of the teeth

knew how deep they were placed in their sockets or in the alveolar processes, and that to get them out was likely to cause fracture. The forceps which had a long leverage and a screw action could bite securely upon the teeth when manual snd physical power would be sufficient to wrench them out. But teeth fixed as he had described, even if loose, it would be impossible to get out with an ordinary lever. His process was to tap the teeth underneath and raise it from its bed. Then, having brought the crown of the tooth above the level of the other teeth, he took a chisel which he had invented, and with the help of percussion he could fracture that part of the tooth and reduce its length; when relieved from the cavity and brought up a certain distance, then with the lateral or upright action the tooth would come out. But when you put an ordinary leverage on, as Professor Simmonds once said to him, "you cannot get it out." "No," he had replied, "but you can fracture the jaw." One little difficulty which he had had he would refer to. He was called in to see a horse suffering from diseased molar teeth. He extracted two of them very readily. There was one at the posterior part, which was very much elongated on account of losing its attrition. The animal quidded continually and was very much emaciated. He could not get instruments to bear upon the teeth, and came to the conclusion that he must punch it out with his sliding chisel. He had the animal cast, and having adjusted the instrument, percussion was used with a hammer till he had displaced the tooth. Then came the gist of the operation. His assistant said, "It is out, sir;" and as such he was told to put his hand in and take it out of the mouth, but replied that "He could not find it." He observed that the animal gave a gasp, and remarked, "It is down his throat," and so it was, and as the animal lay passive he said it was very likely he would die, for he seemed gasping and as near dead as possible. He ordered him to be freed from his hobbles and allowed to get up. The respiration was very hurried, but at last he gave a sudden cough and the tooth flew out. He remarked, "He is saved;" and he had the credit of having done the animal some good.

Professor Axe, in reply to Mr. Gowing, said he apprehended the case was a common one, affecting the bones of the horse, viz. sarcoma. Cases of that description were very frequently brought before them, and these destructive changes would frequently take place in a very gradual manner, and at first be very slightly perceptible to those in attendance on the animals. In that particular instance he had no doubt the disease had been in existence a considerable time, but, beyond a bad odour, it appeared that nothing had been observed till a very recent date. When sarcomatous tumours commenced to grow, after being in a quiescent state, they did so very rapidly, and sometimes, as when they appeared beneath the skin, they might develop to the extent of several pounds in a few weeks' time.

Mr. Gowing asked if the President thought the morbid con-

dition of growth had its origin from the teeth themselves, or from the disturbance of the teeth first or all, or from the diseased structure of the bone itself.

The Chairman said he presumed that these cases generally had their origin in the bone itself. In some specimens which had come under his observation he had found the disease to commence in the periosteum, in other cases in the lining membrane of the bone.

Mr. Gowing inquired what might give rise to the disease in the bone, and why such disease should exist on one side and not on the other, or from what cause the disease might be supposed to take place in the bone.

The Chairman replied it was very difficult to conceive what was the actual condition of the tissues or the state of the constitution, but what was known of sarcomatous growths pointed to external violence as an exciting cause. In all probability the fact of sarcomatous growths in connection with bones occurring more especially in the region of the teeth, arises from those organs being engaged in a grinding process, and on that account being sometimes exposed to accidental concussive influence. That possibly might be the explanation.

Mr. Gowing inquired if the President thought it arose from any hereditary predisposition, from constitutional causes, or from local injury.

The President said he had no data which would justify him in referring it to hereditary causes.

Mr. Moore said he had known numbers of horses slaughtered for glanders from a misapprehension of the disease, and some of them, if allowed to live a little longer, would have become quite well.

The Secretary.—In reply to the question, What is the probable cause? the Chairman says that it is often injury. One other cause, some early members of the society would probably remember, was suggested by a case brought before them by Mr. Fleming, in which the lower jaws were both affected owing to misplaced teeth. The teeth, instead of taking their normal position, sloped a little on one side, and formed the appearance of petrous tumours. He made a lateral incision, and in doing so had proved that the unmasticated grain had gradually forced its way between the molars, making large cavities at their sockets in both jaws, and forming a lateral osseal tumour. It led to starvation. The case occurred in Mr. Martin's practice at Rochester. It was a subject of much comment as to what the enlargements were, and whether they were petrous in their character or not.

The President would like it to be understood that he considered it quite competent for extraneous matter to produce disease of bone and even sarcomatous growths.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

ESSAY ON QUACKERY.

Read by Mr. Parlan Walker at the Meeting held Nov. 13th, 1877.

Mr. President and Gentlemen,—In conformity with your kind invitation at our last meeting and with my promise on that occasion, I have now to lay before you a few thoughts for your friendly consideration. You were kind enough to leave with me the choice of my own subject for an essay, and whilst being sensible of this favour, it has occurred to me that we have had scientific matters before us for discussion so often that I could not introduce anything of an instructive character in that domain. But there is a subject which it seems to me in our district we have peculiarly to contend with and which will take somewhat the character of a novelty at such a meeting as this, and that is quackery. The title of my essay is "Quackery outside and Quackery inside the Profession," and although with some the subject may be considered premature, I am so convinced of its vital influence on the status of the profession that I venture to bring it before you, not in any personal manner, far from that, but that it may receive such discussion and notice as this Society is well able to confer.

Now, it is not my object to say anything derogatory to the quack; this is a free country, and every man has a right to pursue what course he considers best for his own interest, and although cases have come before us of flagrant maltreatment we must remember that it is not every man's privilege to take up residence and pursue the curriculum at the college, yet, undoubtedly, a person may have obtained a certain degree of knowledge of veterinary science as to ensure success in simple cases without undergoing such training. Every one has a perfect right to utilise his knowledge; but with reference to his real qualifications the public are very much in the dark until some complicated case springs up, and so long as his clients have their eyes open the profession can have no reason to complain. As to the quack assuming the title of Veterinary Surgeon, we of course cannot blame him; but here is a subject claiming our consideration, and it seems to me I may now enter on the second part of it, as this now belongs to our internal arrangements and should be within the scope of our correction. Now, when I went to college and spent my money and time, and at the close received my diploma, I honestly thought that I had got an authorised and protected title of V.S., and the diploma referred to plainly told me that I was qualified to practise the veterinary art; but I found no protection conferred upon me by what I fondly looked upon as an exclusive authority, and that the title of veterinary surgeon could be assumed by any incompetent or unauthorised person without restriction. Now, this is a state of

things which, I think, for the credit of the profession, we ought to repressively handle promptly, and I bring it forward to elicit discussion, as I think it very unfair that, after spending my money and time, should I make a mistake, I am liable at law, whereas with the quack the law protects him, and tells claimants they should employ properly qualified persons. But in nine case out of ten claimants are ignorant as to the non-qualifications of their veterinary surgeons until the plea is put in in defence. Therefore, I think if the law holds us responsible, it should also protect us from infringement of our privileges and title, as is the case in the sister profession.

Another feature of quackery inside the profession is no cure no pay; now, when your training and your profession are so lightly valued as to require you to take up cases on such terms, no credit is conferred upon the profession, and no ultimate advantage to the proposer, either with the patient, the owner, or the servant, can possibly accrue, yet such cases are to be met with. Again, we have within the profession gentlemen who practise the homœopathic or the allopathic treatment as their clients desire. I look upon this as a very base system of quackery. I think one ought to stand on the one side or the other. The two systems are diametrically opposite to each other; the one receives no sanction from our honorable society. Now, I do not believe in homœopathy, and an influential client of mine styled it, prescribing your drops of nothing to a bucket of water, and dipping the extreme point of the tail in it, twelve times a day, and another one in much more expressive terms, but not so polite, showing the absurdity of this mode of treatment. By all means let us pin our faith to one system. There is another species of quackery I have met with, which I may allude to in passing, and that is hawking medicine and recipes through the country, thus putting into the heads of grooms and stablemen, notions that they have got in their possession specifics for different diseases; and when the absurdity of such notions is made manifest by being put into practice, it does not redound much to the credit of the profession, when the retort is made that the recipe was obtained from So-and-so, often without the sanction and knowledge of the master, and we all know how difficult it is to uproot prejudice of ignorant minds. I think we should set our faces against this begging system. It would give a ludicrous aspect, may be, were some of our friends asked to produce their pedlar's license; they might be weighed in the scales and found wanting. But seriously I have often found this detrimental to the dignity of the veterinary profession. Mr. President, I have how come to the most vital point of my subject, a point, sir, at which I would fain refrain from going any further, but in all honor and justice to our noble profession, its members, our society, and myself, I feel it a bounden duty to bring it to the front. I am about to tell you of the great helm of success of the quack—his wheel of fortune, his fortress, his preserve, his haven, his great boast—and that is that, whenever the quack sees danger,

or that the death of his patient is inevitable, coupled with the confidence of his client being shaken, he has nothing to do but to send a telegraphic message to one or another member of our profession and in the shortest time he has him by his side for consultation. It is a fact, and it has come under my own personal knowledge, that my brother members of the profession are not always sent for to relieve the dying symptoms of the victim of the quack.

Nay, friends, it is when the confidence of the client is on the balance and the reputation of the quack is at stake that the sanction of our profession is sought to bolster up the reputation of the quack and hoodwink the shaking confidence of the client. It is by those means that the principles and practice of our profession are kept from having their legitimate issue and promotion. This, Mr. President, is a most miserable state of affairs; nevertheless these are facts, and facts are stubborn things and chiels that winna ding; and, sir, if there is one thing more than another that tends to disgrace, to disparage, to undermine, to lower the status, and to fire, blister, and blast the prospects of the veterinary art, it is the qualified veterinary surgeon consulting with the quack—quackery of quackeries in the extreme. If these gentlemen have not any respect for the honorable profession from which they take their title, they might, at all events, have some little respect for themselves. What is the use of our meeting here from time to time if this object cannot be attained? An isolated veterinary surgeon, here and there, is powerless to put down quackery; and we may well take a lesson from the sister profession, who place a united front against the inroads of the quack in every shape and form. I yield to no man in my desire and determination to uphold and raise the character of our profession; and whilst it is far from me to introduce an element of discord into our meetings, the weal of this society is paramount with me; and that notwithstanding at a postprandial discussion on this very subject at one of our late meetings, it came from a high authority that quackery would die a natural death. Natural death, forsooth! How can it so die when upheld and nurtured in the manner described? Do let us determine, my friends, individually and collectively, to put away this state of things, for in that course lies the only remedy. For my part, I shall exercise, as I have hitherto done, the whole weight of my humble influence, determination, and advice, to bring about a better issue—to terminate a state of things alike unprofitable to the public and discreditable to ourselves.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

At the last general meeting of the above society, held in Manchester on the 10th of March, 1875, a resolution was passed, that an annual financial statement, or balance-sheet, should be recorded in the *Veterinarian* and the *Veterinary Journal*. In obedience to such resolution, I beg to submit the following statement.

Thomas Greaves, *Hon. Treasurer*,
Knott Mill, Manchester.

"The Natianal Veterinary Mutual Defence Society." The Treasurer's Financial Statement, 1877

Cash Received.	£	*s.*	*d.*
Balance of account on Oct. 10th, 1876, in Bank and in hand . . .	325	15	5
Subscriptions of members from Oct. 10th, 1876, to Nov. 28th, 1877 . .	81	9	10
Bank interest, two half years, Dec., 1876, and June, 1877 . . .	3	11	10
	£410	17	1

Cash Paid.	£	*s.*	*d*
Dec. 13th, 1876, cheque for Messrs. Leather and Son, law expenses .	18	2	0
Ditto, ditto, award for loss	13	10	0
March 17th, 1877, cheque for Mr. W. Elam, settlement of claim . .	35	0	0
Nov. 25th, 1877, stamps, stationery, rent for room for meetings, for thirteen months . .	2	13	11
Cash in Bank . . .	341	11	2
	£410	17	1

Nov. 25th, amount owing at this date, £51 5s. 0d.
Thomas Greaves.

Audited and found correct.
Richard S. Reynolds.
7th Dec., 1877.

"The National Veterinary Benevolent Society." The Treasurer's Financial Statement.

Cash Received.	£	*s.*	*d.*
Balance of account on Oct. 10th, 1876, in Bank and in hand . . .	842	17	9
Subscriptions from members from Oct. 10th, 1876, to Nov. 25th, 1877	10	0	8
Bank interest, two half years, Dec., 1876, and June, 1877 . . .	9	9	10
Overpaid into Bank . .	9	9	4
	£871	17	7

Cash Paid.	£	*s.*	*d.*
Nov. 25th, 1877, cash in Bank	871	17	7
	£871	17	7

Audited and found correct.
Richard S. Reynolds.
7th Dec., 1877.

Amounts received from Oct. 10th, 1876, to Nov. 25th, 1877.

1876.	£	s.	d.
James Carter	0	10	6
Hugh Ferguson	1	2	0
Joseph Leather and Son on account of trial	5	0	0
Samuel Newman	1	1	0
W. Elam	3	3	0
1877.			
J. C. Bailey	1	1	0
John Howard	1	11	6
John Carless	1	1	0
W. Carless	1	1	0
S. Withers	1	1	0
John Malcolm	0	10	6
Rd. Reynolds	0	10	6
C. W. Elam	1	1	0
James Freeman	0	10	6
Jos. Freeman	0	10	6
John Freeman	0	10	6
E. Meek	1	1	0
W. G. Schofield	0	10	6
Thomas Gregory	0	10	6
James Moon	1	1	0
Benjamin Cartledge	1	1	0
J. D. Overed	0	10	6
Henry Olver	0	10	6
John James	1	11	6
F. Samson	1	1	0
Jos. Welsby	1	1	0
T. D. Lambert	1	1	0
J. B. Gregory	0	10	6
Jos. Bale	0	10	6
A. C. Cope	2	2	0
T. G. Proctor	1	1	0
P. Taylor	1	1	0
A. Taylor	1	1	0
Thomas Greaves	1	1	0
W. Woods	0	10	6
W. Whittle	1	1	0
James Storrar	0	10	6
W. Walley	0	10	6
T. D. Broad	1	1	0
T. B. Hopkins	1	1	0
R. H. Dyer	1	1	0
W. Dobie	1	1	0
John Cuthbert	0	10	6
Thomas Pratt	1	11	6
Thomas Anderson	0	10	6
W. Broughton	0	10	6
J. L. Faulkner	0	10	6
Thomas Patteson	1	1	0
A. Lawson	1	1	0
James Brookes	0	10	6
W. Dacre	1	1	0
A. Rushall	1	1	0
John Lawson	1	1	0
James Carter	0	10	6
T. D. Broad	1	1	0
Gilbert Heyes	1	1	0
E. Nuttall	0	10	6
Mr. Day	1	1	0
James Howel	2	2	0
John Malcome	0	10	6
Thomas Cave	1	1	0
F. G. Samson £5, returned June 12th, 1877			
S. Newman	0	10	6
A. L. Gibson	1	1	0
John Collins	0	10	6
M. Smith	1	1	0
W. Elam, on account for trial	5	0	0
D. R. Scruby	1	1	0
W. Fryer	0	10	6
Mr. Broad	1	1	0
Thomas Taylor	1	1	0
E. Woodyer	2	2	0
F. Blakeway	1	1	0
M. Murphy	3	3	0
G. H. Pyatt	1	1	0
H. R. Perrin	1	1	0
J. A. Taylor	1	1	0
G. Carliss	1	1	0
Russell H. Rushall	1	11	6
H. M. Stanley	1	1	0
James Collins, P.V.S.A.	1	1	0
John Gerrard	1	1	0
G. Newsome	0	10	6
G. Darwell	1	1	0
G. Morgan	1	3	0
	91	10	6

Audited and found correct.

RICHARD S. REYNOLDS.

7th Dec., 1877.

Veterinary Jurisprudence.

TYPHOID FEVER IN PIGS.

SUPREME COURT OF JUDICATURE.—COURT OF APPEAL.

(*Before Lords Justices* BRAMWELL, BRETT, *and* COTTON).

WARD *v.* HOBBS—JUDGMENT.

AT the sitting of the Court this morning their lordships delivered judgment in this appeal from the Queen's Bench Division, which raised a question of considerable importance under the Contagious Diseases (Animals) Act of 1869.

It was an action for breach of warranty and false representation as to the condition of certain pigs sold by the defendant to the plaintiff by public auction at Newbury Market. The pigs in question formed part of a herd, many of which had previously died of typhoid fever, a disease very infectious and fatal to animals, and in this state they were sent to market. The defendant made no express representation as to the condition of the pigs, and one of the conditions of sale was, "No warranty will be given by the auctioneer with any lot, and as all lots are open to inspection previous to the commencement of the sale no compensation shall be made in respect of any fault or error of description of any lot in the catalogue." The pigs so purchased by the plaintiff were driven home, and shortly afterwards died of typhoid fever, as did some others of another herd, purchased by the plaintiff, with which the diseased animals came in contact. For this loss the plaintiff brought his action, which was tried before Lord Justice Brett, when the jury found for the plaintiff, with £66 19s. as damages. The learned judge refused to nonsuit the plaintiff at the trial, but reserved leave to the defendant to move the Court above for a nonsuit, and he accordingly appealed to the Queen's Bench Division, on the ground that there there was no evidence to go to the jury of a warranty or misrepresentation as to the condition of the pigs. Justices Mellor and Lush, however, held that as the exposure of animals suffering from contagious disease was a criminal offence at law, and under the Contagious Diseases (Animals) Act, 1869 (32 and 33 Vic., c. 70, sec. 57), the fact of the defendant having sent the pigs to market implied evidence of representation, and the purchaser had a right to assume that the seller was not committing an offence, and that from their being so sent the buyer did not suppose they were infected. Their lordsbips accordingly refused the nonsuit and directed judgment to be entered for the plaintiff for the amount awarded to him by the jury. From this decision the defendant appealed to this Court, and the case was argued during the present sittings, when judgment was reserved.

Lord Justice Bramwell, in giving judgment, said he thought

there was not in this case such evidence of representation as would enable the plaintiff to maintain his action. The public were protected in cases of this kind, and any man who had his pigs injured by reason of other diseased pigs being driven along a public road would have a cause of action against the owner of the latter. It was not contended that the defendant had dishonestly affirmed to the plaintiff that the pigs were not affected with contagious disease to his knowledge. It could not be said that, because the defendant did not warrant the pigs, he had good reason for believing them to be infected, and there was no charge that the defendant had misrepresented what he knew to be untrue, and thus deceived the plaintiff. The statement in the claim was that the plaintiff had a right to recover, however honest the defendant might have been, and the jury had not found that he desired to deceive any one. The result therefore was that the defendant was entitled to the judgment of this Court, and the decision of the Court below must be reversed.

Lord Justice Brett said, that having tried the cause, he came to the same conclusion with the utmost reluctance, for if he thought that the conduct of the defendant could make him liable he should be happy to make him so. In the statement of claim there had been no allegation of fraud or false representation, and he did not like to amend by inserting an allegation of fraud when that had not been done by the parties. He thought that a jury would have been justified in finding in a case of this kind that the pigs were valueless from disease, and dangerous to others with which they were brought in contiguity; but the defendant gave no warranty; on the contrary, one of the conditions of sale was that the pigs were sold with all their faults, and as there was no warranty the plaintiff could not sue for breach of warranty. The only form in which he could bring his action was that the representation was fraudulent, and that to the knowledge of the defendant, but he made no representation as to the quality of these pigs. As to the presumption that a man would not run the risk of being convicted of crime, it was not true in any case, certainly not in this case, for he sent the pigs to market knowing they were infected, and that was a crime for which he might have been fined. If the defendant had sold the pigs on his own farm he would not have been guilty of a crime, but of gross dishonesty. Although he should have been most anxious to uphold the decision of the Queen's Bench, yet if the Court did so it would be introducing a new presumption that a man would not run the risk of committing a crime, and on the ground that there was no evidence of representation to go to the jury, he reluctantly came to the conclusion that the judgment of the Court below could not be maintained.

Lord Justice Cotton was of the same opinion, holding that the sending of the pigs to market was the ordinary way of getting rid of them, and the Court could not from that fact come to the conclusion that the defendant had made a representation that to his

knowledge there was nothing wrong with the animals, and that was essential to the maintenance of the action.

The judgment of the Court below was therefore reversed and the appeal allowed.

LAMINITIS.

Queen's Bench Division, Dec. 14th.

(*Sittings at Nisi Prius, at Guildhall, before Mr. Justice* Field *and a Special Jury*).

O'Neill *v.* Parsons.

This was an action for the breach of a warranty of soundness given by the defendant in respect of a horse which had been purchased from him by the plaintiff.

Mr. Day, Q.C., and *Mr. Finlay* were for the plaintiff; *Mr. Lawrance, Q.C.*, and *Mr. Baldock Stone* for the defendant.

The plaintiff is a merchant, residing at Streatham, and the defendant carries on business as a dealer in horses, under the name of the Ashurst-lodge Stud Company, at Langton, near Tunbridge Wells. It appeared that the plaintiff, wishing to dispose of a chestnut mare which belonged to him, was recommended by a veterinary surgeon, named Greening, to send her to the defendant; and thus with the view of selling the mare and purchasing a substitute for it the plaintiff, on the 26th September, 1876, accompanied Greening to Ashurst-lodge, and was then introduced by him to the defendant. A gray gelding was brought out and shown to the plaintiff, for which the defendant asked £150; and it was ultimately arranged that the plaintiff should give £100 in cash for it, and that the defendant should take the chestnut mare in payment of the remaining £50. A receipt was accordingly written out by the defendant, to which, at the request of the plaintiff, he added a warranty that the horse was sound. In respect of this transaction the plaintiff paid Greening a commission of £5 per cent. upon the price of the horse, and it appeared that a further commission was also paid him by the defendant. In October the horse was sent to the plaintiff's house at Streatham, but shortly afterwards it went lame, and after having been laid up some time was eventually, on the 10th of January last, examined by Mr. Mavor, veterinary surgeon, and pronounced by him to be suffering from laminitis, a disease of the foot. Two other veterinary surgeons examined the horse, and both they and Mr. Mavor stated that, in their judgment, the disease must have existed on the 26th of September, when the horse was bought.

On the part of the defendant it was suggested that the horse had been improperly treated after the sale to the plaintiff, the lameness being due to his suffering from cracked heels, which had not been duly attended to, and not to laminitis at all, and that at the time of the sale he was in a perfectly sound condition.

In support of this case, Mr. Greening, the veterinary surgeon, who examined the horse when it was sold, and again subsequently when it was in the plaintiff's stable, was called, and also a farrier who worked for him, and who had shod the horse since the sale. Both these witnesses corroborated the defendant in his statement that there was no sign of laminitis in the feet.

The jury found that the horse was unsound at the time when it was bought, and accordingly judgment was entered for the plaintiff for £120.

At the conclusion of the case, his *Lordship* commented strongly upon the fact that a double commission had been received, saying that he wished to express his most emphatic disapproval of such a practice, which was inconsistent with fair and impartial dealing, and ought not to be tolerated in commercial transactions.

ABOLITION OF THE RESTRICTIONS FOR THE REMOVAL OF CATTLE FROM THE METROPOLIS.—Order of Council.

At the Council Chamber, Whitehall, the 21st day of Nov., 1877, by the Lords of Her Majesty's Most Honourable Privy Council.

Present: Mr. Secretary Cross; Mr. W. H. Smith.

The Lords and others of Her Majesty's Most Honourable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1869, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:

1. This Order shall take effect from and immediately after the twenty-third day of November, one thousand eight hundred and seventy-seven.

2. The Orders described in the schedule to this Order are hereby revoked.

3. Nothing in this Order shall be deemed to invalidate or make unlawful anything done under the said Orders, or any of them, before the date when this revocation takes effect, or interfere with the institution or prosecution of any proceeding in respect of any offence committed against, or any penalty incurred under, the said Orders, or any of them.

(Signed) C. L. Peel.

SCHEDULE.

Orders of Council revoked.

Date.	Subject or Short Title.
1877.	
31 January	The Metropolitan Cattle Plague Order of 1877.
2 February	Regulating the holding of markets and sales of cattle, sheep, and goats within the Metropolis.
14 August	The Metropolis (Movement) Order of August, 1877.

ARMY APPOINTMENTS.

War Office, Pall Mall, *Dec. 7th*, 1877.

Royal Artillery.—The undermentioned veterinary-surgeons on probation to be veterinary-surgeons:

Daniel Chambers Pallin, *vice* E. T. Cheeseman, transferred to the 5th Dragoon Guards.

Joshua Arthur Nunn, *vice* J. Tatam, promoted staff-veterinary surgeon.

MISCELLANEA.

GOLD SHOES FOR A MARE.

A young thorough-bred bay mare, the property of Miss Thomson, a wealthy American lady lately resident in Edinburgh, was last week shod by Mr. Baird, V.S., Edinburgh, with a set of gold shoes, costing from £400 to £500. The shoes, like the nails with which they are fastened, are of half-inch gold. About a year ago the mare was purchased at £100 from Messrs. P. Moir and Son, Edinburgh, and since then has accompanied Miss Thomson in her travels through America. The mare and her attached owner have left Edinburgh with the intention, it is believed, of re-crossing the Atlantic.—*North British Agriculturist*, December 5th, 1877.

OBITUARY.

On the 24th November, aged 45 years, James McKenna, M.R.C.V.S., *late* Belfast. His diploma bears date April 26th, 1865. He was the last of the McKenna family who held a diploma.

Also Mr. Thos. Twelves Hudson, M.R.C.V.S., *late* Retford. His diploma bears date December 21st, 1853.

ERRATUM—Letter from Professor Walley.

Gentlemen,—Will you do me the favour of allowing me to correct the remarks made by me in reference to Mr. Melvin's evidence on zymotic pleuro-pneumonia as published in your last issue page 870.

My remarks should have read, "That Mr. Melvin had stated that pleuro-pneumonia existed in a greater proportion in those areas into which Dutch cattle were imported than in any other parts of Scotland," thereby inferring that the Dutch cattle were to be accredited with the introduction of the disease.

I am, &c.,

Thomas Walley.

THE

VETERINARIAN.

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Communications and Cases.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 5.)

Tribe VIII.—GNAPHALIEÆ.

1. Heads two-sexual; receptacle flat, naked.—*Gnaphalium.*
2. Heads almost diœcious; pappus of male clavate.—*Antennaria.*
3. Heads two-sexual; receptacle conical; bracteoles few.—*Filago.*

Botanists for the most part adopt the three genera as here marked, but we prefer to consider them under one head, thus adopting the description given by Bentham, as follows :

CUDWEED.—*Gnaphalium.*

Herbs more or less covered with a grey or white cottony wool; the leaves narrow and entire. Flower-heads small, sessile, often clustered, rarely forming terminal corymbs. Involucral bracts imbricated, cottony outside, and more or less dry, scarious, and often coloured at the tips. Receptacle small, without scales. Florets of the centre tubular, but often barren; those of the circumference filiform and female, or the two kinds separated in different heads. Anthers with minute bristles or hair-like points at their base. Style of senecio. Achenes with a pappus of simple hairs.

If taken in its integrity this genus is one of the most extensive among *composites*, and the widest diffused over the globe. It has been, however, subdivided into a very large number of small genera upon minute characters, the natural value of which is scarcely yet satisfactorily established. The most marked of them applicable to the British species, and which may be considered, at any rate, as sections, are the following:

1. ANTENNARIA. Flower-heads diœcious, comprising the *diœcious* c. and the *pearl* c. 2. MEROPE. Hairs of the pappus continued in a ring at the base; the *wood* c. and the *dwarf* c. 3. FILAGO. Receptacle bearing a row of scales between the outer and the next row of florets; the *common* c., *narrow* c., and *least* c.

Leaving in, 4, GNAPHALIUM, the somewhat dissimilar *Jersey* c. and *marsh* c. Most of the *composite everlastings* of our gardens belong to the allied genus HELICHRYSUM, of which no species are British.

The cudweeds and everlastings afford us an interesting series of native plants, among which the following are the most noticeable:

1. *Gnaphalium uliginosum*—Marsh cudweed.
2. „ *Germanica*—Common cudweed.
3. „ *sylvaticum*—Upright cudweed.
4. „ *margeritaceum*—Pearly everlasting.

The marsh cudweed is common to damp roadsides, waste places, and even arable fields, usually coming up in quantity in places where water has lain for a considerable portion of the year; it is then a sign of damp situations, indicating a want of drainage. It is but a small plant, and yet it usually grows together in such thick clusters as to render any other growth almost impossible. It is, however, easily removed by the hoe, and frequently a single cut though the edge of a basin in which it may be growing is sufficient to discourage its growth.

The common cudweed of our calcareous arable soils has most likely been introduced with agricultural seeds, as it is a true agrarian. It is readily distinguished by its sessile heads of yellowish-green flowers, with its small hoary or cottony leaves.

It is common to all agrarian districts, and hence small seeds are excedingly liable to be infested with it. On the oolites it is exceedingly prevalent; it is, however, easily kept under by a diligent use of the hoe, but constant cropping and good treatment of the crops is the most effectual treatment.

The upright cudweed is a not very common plant. We have gathered it in some abundance on the summit of Cleeve Cloud, a height of the Cotteswolds, attaining to as much as 1200 feet.

It is commoner in Scotland than in England, where we have never found it in the south at all, though Mr. Mansel Pleydell records it in his 'Dorset Flora.'

The pearly everlasting affords several varieties; thus, our common form is employed as a garden plant, and its flowers are made into wreaths, which, albeit though not so attractive as the larger or French forms, are yet suitable to our more modest modes of expression. We are told by Mrs. Lankester that—

"The flowers sold so much in France under the name of *immortelles* are a species of this genus, and resemble our native ones, which form a substitute for the brighter kinds. Wreaths, chaplets, and innumerable devices are formed out of these flowers to decorate the graves of departed friends in France. In the neighbourhood of Pere la Chaise, the great Parisian cemetery, numbers of families are constantly employed in the manufacture of these memorials, and a large sale of them is constantly effected."*

During the reign of the late Emperor of the French we strolled into the Place Vendôme on his fête-day, when we counted upwards of 400 wreaths of various sizes suspended to the column and upon its railings. A few years later and the column was made to bite the dust; but, as it has again been raised upon its proud pedestal, we shall not be surprised if it be not again made to bear its burden of *immortelles*.

"TRIBE IX.—SENECIONIDEÆ.

"*Leaves* alternate. *Fowers* all yellow, tubular, and two-sexual, or outer ligulate. *Receptacle* naked. *Anther-cells* without tails. *Style-arms* as in *Gnaphalieæ*, but sometimes tipped with short papillose cones (as in *Asteroideæ*). *Pappus-hairs* usually very soft (rigid in *Doronicum*).

"1. Involucral bracts in many series.—*Doronicum*.

"2. Involucral bracts in one series.—*Senecio*."†

The genus *Doronicum* is represented by two allied species, which are common to the garden, from which it has almost become naturalised. It formerly had a great reputation as a powerful physic herb, and it is even reported, though we know not upon what authority, that the learned Gesner

* 'English Botany,' vol. v, p. 79.

† 'Students Flora,' by Sir J. Hooker, p. 186.

destroyed himself by experimenting with the *D. Pardalianches*, or great leopard's bane; but Johns tells us that "The fact appears to be that the leopards and 'other fower-footed beasts' (supposed to have been killed by it, hence its common name) were poisoned by aconite, one of the author's synonyms for *Pardalianches*."*

The genus *Senecio* comprehends two divisions, the first with small, scarcely-rayed flowers, which get the common name of groundsels, and the second with conspicuous rays, called ragworts. These may be represented by the *S. vulgaris* and *S. Jacobæa*.

The common groundsel is too well known to need description; it is a common weed, and one which requires all the care and energy of the gardener to keep in subjection whenever it once gets the mastery. It is quite a plant of cultivation, not occurring beyond the bounds of the garden, even to the farm, unless the latter is cultivated upon garden principles. A species allied to the common form known as *S. sylvaticus* is partial to sandy soils, and occurs on dry heaths, waste places, and woods, where sands abound. It seldom attacks crops like the former, and is more amenable to cultivation, not venturing far beyond wild growth.

The *S. Jacoba* is a lover of sandy situations and light soils. Its bright yellow flowers make it very conspicuous in summer. Allied forms are common to damp situations, some of which are rare, but they are only interesting in a botanical point of view.

The groundsels and ragworts are now seldom used medicinally, though they once possessed considerable reputation. The achenes or seeds, however, find favour with birds, which, indeed, freely eat of the foliage, so that we may be quite sure they do not possess any very active principles. It is said that a poultice of the common groundsel applied to the pit of the stomach produces vomiting, and an infusion of the plant produces the same effect; but we have not tried it, though we are not prepared to say that the green infusion of many plants may not be capable of producing nausea. In fact, we are now getting to the more innocent forms of the order, and consequently those which will have next to be examined will rather appeal to us as food than of anything in the shape of active medicines.

* 'The Treasury of Botany,' part i, p. 424.

HYPODERMIC USE OF MEDICINES.

By John Dowling Allman. A.P.S., Contributor on Physiology and Therapeutics to the *Veterinary Journal,* Cree Church Lane.

I have had frequent inquiries from many members of the veterinary profession for reliable solutions of some of the principal medicines suitable for subcutaneous injection. I know that a good many scientific practitioners constantly use the hypodermic syringe, and have derived wonderful effects from its use, often saving valuable life where imminent death was threatened, and which was intractable to remedies given by the mouth. A loss has been sadly felt by the profession for some of the principal alkaloids in solution and suitable for subcutaneous use. In order to supply this want I have recently made a special research into the hypodermic mode of administering medicines, and the information I have obtained, both from foreign and English authors, has enabled me to decide on some valuable and useful concentrated solutions which will be found to have their full physiological and therapeutical action. The hypodermic mode of treatment has certainly many advantages, for with a small dose and in a short space of time an animal can be brought under the full physiological effects of the drug injected, without deranging the digestive organs, or incurring the risk of having the remedy impaired by the digestive fluids. In many acute or subacute diseases, where the pain is intense and the animal shows no signs of relief by medicines already administered by the mouth, the subcutaneous injection is the last and only resource, and in most cases will give immediate relief. For instance, in spasmodic colic, pleurisy, and pleurodynia, an animal can be relieved at once by injecting subcutaneously morphia and atropine. The operation is of the simplest description. A fold of loose skin is taken up between the finger and thumb of the left hand, a suitable syringe is inserted with the right hand, the point being carried about an inch underneath the skin, parallel with the surface ; the syringe is slowly emptied, and, after a minute or two, cautiously withdrawn, and the finger pressed along its track. It is not necessary to dress or plaster the small puncture, and by a properly-prepared solution no local suppuration takes place. Subcutaneous injection has been very successfully used by Mr. F. J. Mavor, M.R.C.V.S., Park Street, by Mr. W. H. Thomas, M.R.C.V.S., Plymouth,

Mr. Alex. Lawson, M.R.C.V..S, Manchester, and many other veterinarians, and owing to the marvellous results obtained its use is becoming more generally adopted. In fact, the observant and scientific veterinarian deems it as important to have his hypodermic syringe at hand as he now considers it necessary to have his clinical thermometer; the importance of which I have already pointed out in the pages of the *Journal*. I was present when Mr. Spencer Wells, the eminent surgeon, delivered his address on surgery at the British Medical Meeting, held at Manchester in August last. Speaking of clinical thermometers, Mr. Spencer Wells remarked, "Gentlemen, you start under immense advantages. When I began to practise surgery the only test of normal or fever heat was the sensation conveyed to the surgeon's hand. It is hardly more than twenty years since the coincidence of a rigor and high temperature was first satisfactorily proved. Now, the most delicate self-registering thermometers are not only carried by every careful surgeon, but every well-trained nurse is taught to make and record as many daily observations as the nature of the case may require. The various forms of surgical fever, pyæmia, septicæmia, erysipelas, are in consequence far better known, and more perfectly guarded against, while the ground is cleared for the study of their more successful treatment." So with the hypodermic syringe: every careful surgeon and veterinary surgeon is provided with one to meet any emergent case which may arise. Mr. F. J. Mavor records some interesting clinical cases and experiments in his work, 'The Specific Action of Drugs,' and in order to make my article a little interesting I take the liberty of quoting a few here.

Case E.—A mare, with the following symptoms: Quick full pulse, temperature 104°, conjunctiva injected, tongue extremely dry, bowels constipated, no fæces having passed for forty-eight hours; extreme pain, as indicated by the animal rolling itself about on the ground; perspiring freely; was cured by the following treatment. Hot fomentations to abdomen, restorative doses of nitrate of strychnine and belladonna every four hours by the mouth, and a few doses subcutaneously injected. In a few hours the pain had entirely subsided, and in forty-eight hours the animal was quite well, the bowels having acted freely, and thus relieved the distended colon.

Case G.—This horse had been exposed to cold and wet, and when first seen was rolling about, evidently suffering great pain in the abdomen; a physiological dose of atropine

and morphia was at once injected subcutaneously, which immediately relieved the colic.

Case H.—This animal when first seen was suffering from great pain, with spasmodic action of the diaphragm, and evidently in great distress; breathing very quick. A physiological dose of atropine and morphia injected subcutaneously at once, and repeated twice at an interval of seven hours; within twenty-four hours he was quite well.

Case L.—This horse was suffering from rheumatism in the off shoulder, with twitching of the muscles and lameness. Injected subcutaneously 2 grains of acetate of morphia. Next day he was much improved; repeated the dose. The third day he was nearly sound and no twitching; and by the fourth day he was quite sound.

Hypodermic Solutions and their Therapeutics.

Injectio Morphiæ Hypodermica (1 gr. in 12 minims).—Twenty-four minims (2 grs.) injected subcutaneously will be found invaluable to relieve pain arising from any cause, such as spasmodic colic, neuralgia, acute rheumatism, and enteritis in horses and cattle, and used conjointly with atropine, great results are obtained in tetanus and spasmodic cough. When morphia and atropine are injected simultaneously, the nausea and vomiting which frequently follow the administration of full doses of opiates is checked, the effects of both drugs are accelerated and intensified, the antispasmodic and anodyne properties are more conspicuous and prolonged.

Injectio Atropiæ Hypodermica (1 gr. in 2 drs.).—Twelve minims to twenty-four ($\frac{1}{10}$ and $\frac{1}{5}$ grs.) injected subcutaneously relieves spasmodic asthma, colic, gastrodynia, rheumatism, pleurisy, and pleurodynia; it is also useful in ophthalmia. Large doses cause dryness of the mouth, yawning, restlessness, and nervousness, the membranes of the eye become injected, twitching of the intercostales and panniculus carnosus. The action of atropine on horses and dogs has been fully demonstrated by Dr. J. Harley, and by Mr. Mavor, as the following experiment on a horse in health will illustrate ('Specific Action of Drugs,' Burness and Mavor, p. 63). "One grain of atropine was given subcutaneously to a horse, producing dilatation of the pupils, dryness of the tongue; the frequency of the pulse was increased. and it became very soft and compressible. The horse was very restless, and there was a good deal of involuntary muscular twitching, especially of the muscles of the neck; conjunctivæ were injected, and the horse gaped and sighed at intervals. He had a staring frightened look, and was easily started,

pawing the ground at intervals, and kicking out as if at some imaginary object. These effects had passed off by next day.

Injectio Conia (gtt. xx in ʒij—2 drs.). Injected subcutaneously in doses of 10 gtts. to 15 gtts. acts as a direct sedative, especially on the spinal cord. Useful in tetanus, especially where the jaws are firmly locked. The following interesting case is recorded by Mr. Mavor (p. 90 'Specific Action of Drugs'). The horse when first seen had the jaws firmly locked, and resisted all attempts at separation, the muscles of the neck rigid, great difficulty in moving its head, and unable to bend its neck. Pulse 42, pupils normal, temperature $100\frac{2}{5}^{\circ}$. At 12 noon gave by subcutaneous injection 15 grs. conia. At 12.7 jaws opened slightly (2 inches), could eat some hay; pulse 36. At 12.15 eyelids drooping. At 12.25 ate some hay, could raise his head easier. At 12.50 eyelids drooping very much, conjunctiva moist, eats freely, pulse 36. At 3 p.m. signs of rigidity returning; passed fæces three times since 12. At 5.35 p.m. gave 20 grs. conia. Next day horse much better, and recovered under the use of strychnine introduced hypodermically.

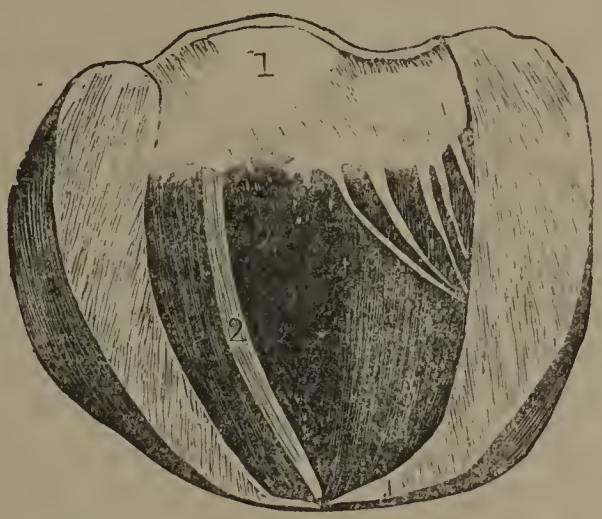
Injectio Strychniæ (1 gr. in 2 drs.).—Indicated in tetanus, alone or in conjunction with conia, as already mentioned. In gastro-enteritis, constipation, imperfect power of urination. In muscular paralysis, weakened or deranged motor power in cattle, especially after parturient apoplexy—"dropping after calving;"—in the early stages of paralysis of the muscles of the larynx of the horse, commonly known as "roaring." For this latter purpose half a grain to a grain injected subcutaneously will prove successful. Likewise useful in chorea, and many epileptic cases, and can be used with advantage in restoring a deranged function of the intestinal canal, acting more readily than any of the active purgatives given by the mouth, and does not produce violent peristaltic action or exhaustion of the system.

In concluding this article I might mention for the information of those that have not hitherto used medicines subcutaneously that a half or even a third of the quantity of any drug given subcutaneously has the same physiological effect as the usual dose given by the mouth. Some solutions produce local suppuration, owing to their not being properly prepared, but this I have guarded against by using glycerine as a solvent.

RHEUMATIC CHOREA IN THE DOG.

By John W. Hill, F.R.C.V.S., Wolverhampton.

On the 5th of last December a fox terrier dog, about six years old, belonging to Miss Walker, of Bromley House, Penn, was brought to me for treatment. I found the animal suffering from rheumatic chorea, and I was informed by the owner that when purchased at nine months old he at that time never stood perfectly still but always shook slightly, especially on the front legs. The dog now moved with a reeling, snatching gait; the latter was particularly observable in the hind legs. The back was also arched. When lying down or resting, the head had a tremulous but not persistent motion; the limbs, however, were continually twitching. I inserted a seton at the back of the ears (my usual course in such cases). The same afternoon, however, before medicinal treatment was commenced, the animal died.



Engraving of Heart.—1. *Mitral valve.* 2. *Fibrinous clot.*

I made a *post-mortem* examination for the purpose of ascertaining the condition of the heart, as the case, being of long standing and complicated with rheumatism, I expected to find cardiac mischief. On making a section through the right ventricle and exposing the tricuspid valve I found the latter thickened and rough, beyond which there was nothing abnormal to be seen; but an examination of the left ventricle revealed the presence of an ante-mortem clot seven-eighths of an inch in length, wedge-shaped, tapering to a point. It was the sixteenth of an inch thick, white in colour and fibrous, having on its upper surface a dark recent blood clot. This ante-mortem clot was immediately below and partly attached to the mitral valve, the latter being much inflamed; the tapering or pointed end was unattached.

I have endeavoured by means of the enclosed sketch to give a more exact idea the heart, valve, and clot presented. (See engraving, page 65.)

The specimen was considered by several men to whom it was shown to be a very interesting and exceptional one, and I have much pleasure in placing it at your disposal.

Since writing the above I have been informed that the dog was stolen in 1876, and nothing was seen or known of his whereabouts for a year, when he unexpectedly returned, and it is supposed by his mistress that during his absence he was roughly used, as his spirit seemed broken, and he had the appearance of being much older than he really was.

SHOEING.

By R. H. Dyer, M.R.C.V.S., Limerick.

Doubtless many persons will exclaim that enough has been written upon this subject; but as each practitioner has an equal right to form opinions, and to give his own individual experience, in matters pertaining to fettering the feet of horses, I may hope that the few observations I shall make will not be without their use.

Elaborate essays have been written by some of our most distinguished veterinarians, and were they now in this world they would, I take it, feel disposed to think that things had been turned topsy-turvy since their time.

Many systems have been advocated for the protection of the foot, and at last a mere narrow rim of iron has in many, I may say with truth in thousands of cases, been found sufficient for that purpose, thus leaving the foot almost in a state of nature. I have before now seen horses travelling upon our Macadamised roads, *minus* shoes, but I have not had an opportunity of knowing how long they were enabled to do so. The fact, however, I can speak of, as I rode behind horses so treated; and in one instance the animal had been sold from the 1st Regiment of Life Guards, in the time of the late Mr. Percivall, as being incurably lame. The Charlier shoe is becoming a great favourite with some horse proprietors, and, from the experience I have had, not without reason.

Most of us are aware that certain rules are laid down, in well regulated forges, for the guidance of workmen; but, whether the instructions given are properly carried out is another question.

In the army, I understand, a pattern shoe is in possession of the farrier, from which he fabricates his supply of shoes for the horses.

Some time ago I was called to an officer's charger, which had become suddenly lame. I found some of the nails protruding at least *two inches high* in the foot, at the quarters and heels. I asked several questions of the farrier relative to his mode of operation, and when he presented a pattern shoe, I remarked that the nail-holes were punched large enough to accommodate a ten- or twelve-pound nail, and were also pointing inwards.

Remarks were made by me as to the direction the nails would be likely to take, unless particular care was exercised in driving them, when the farrier said that was the pattern shoe told out to them. I ordered a pair of fore-shoes to be made, according to my own idea, and I feel certain according to the views entertained by many practitioners of experience also, and I was present when the shoes were applied to the feet. The horse trotted perfectly sound with these shoes. I do not mean to take any special credit for this act, but I cannot avoid remarking that, when a troop is without the constant superintendence of the regimental veterinary surgeon, that matters often go wrong. Some people have an idea that a troop farrier is all-sufficient, not only in shoeing, but in many medical cases, and that the aid of a veterinary surgeon is not necessary. If such is the fact, why appoint qualified veterinary surgeons? Why does the government not do away with the appointment of members of the profession? It cannot be denied that some of these men are intelligent and useful. No doubt, in cases where the regimental veterinary surgeon has a battery or regiment always under his supervision things are well done; but when troops are on detachment, and seldom inspected by the proper officer, many things go wrong. I do not hesitate to affirm that nearly every improvement in the shoeing of horses has emanated with a veterinary surgeon and not from a farrier.

I frequently find cases of lameness, the cause of which is apparently obscure; but which, on examining the nail-holes of the shoes, are easily seen to be produced from improper nailing. Many farriers have the habit of holding the hand obliquely which grasps the punch, and thus the holes incline inwards. If this be done ever so little, the nails will be driven too close to the sensitive parts of the foot, and produce pain and lameness.

This being a fact, there can be no doubt that the student

should have opportunities of learning something more of the art of shoeing than he has hitherto possessed. This brings me to the apprentice system. People may say what they like in reference to this subject, but if young men were to pass three or four years with a veterinary surgeon prior to entering the college they would be better *pratical* men than they are under the *non*-apprentice system.

I am acquainted with men, who have been studying medicine from the age of 14 years; are exceedingly clever, and yet they declare that they are ignorant of many things pertaining to it, although they investigate continually and possess a vast amount of intelligence. If these persons have such feelings, with all their opportunities, how are men to grapple with abstruse subjects, who, up to their twentieth year, scarcely know a mare from a horse, or Epsom salts from rhubarb? It has been truly said "there is no Royal road to learning."

I am free to confess that students of the present day, no matter in what branch they embark, are better taught, and have greater facilities for acquiring information than they had a quarter of a century ago; but this applies more to first principles than to actual practice.

I always entertained the idea that the immediate possession of the diploma was similar to acquiring a knowledge of the alphabet, and that subsequent hard and constant study was needed. When we take into consideration the habits, natural and otherwise, of our numerous patients, we cannot imagine that a novitiate can possibly acquire everything necessary to make a good practitioner in two or three sessions at College. In private practice, a man is expected to know everything concerning his patients, not only with regard to diseases, but many subjects foreign to a veterinary surgeon, and, if he fails to show that he has a knowledge of such things, he is put down as an ignoramus. My letter has merged into the educational scheme, which I did not anticipate.

I remember a case of lameness, the cause of which was obscure, and which was proved beyond a doubt to be the result of improper harnessing the horse.

This leads me to the subject of training, upon which much could be written as well as upon others, which a veterinary surgeon is expected to know something about; but having written more than I intended, I will reserve my remarks on these things for another opportunity.

FASHION IN THE TREATMENT OF DISEASE.

By John Gerrard, M.R.C.V.S., Market Deeping, Lincolnshire.

It is perhaps unnecessary, and probably presumptuous in me, to further occupy your space or tax your readers' patience on this subject. There are a few misconceptions, however, that I am desirous of removing, as Mr. Gresswell seems somewhat in a muddle regarding my object in criticising his papers or the means of accomplishing it. He says, "the superfluity of the double appearance of my criticism is very evident;" although he cannot understand why I should have taken the trouble to do so, seeing that his papers only appeared in the *Veterinarian*. This is something very like a contradiction. I very much doubt if the reason for its double appearance be so evident to him as he seems to imagine. I did not know, and, indeed, scarcely expected, that it would ever appear in the *Veterinarian* at all; as its past policy has been to suppress any light but that of its own or its satellites, and therefore I sent it to both.* And there are plenty of precedents for such a course. If Mr. Gresswell will look into the pages of the *Nineteenth Century*, the *Contemporary Review*, or the *Fortnightly* or *Quarterly Reviews*, he will find one writer upholding a certain subject in one of them, and the criticism often appears in another. Not knowing whether it would appear in the *Veterinarian* or not, I sent it to the *Journal* as the independent organ of the profession, and which I think it is but the duty of every well-wisher of the profession to uphold and encourage. Indeed, the profession may well be proud of having an organ of such independent principles and literary excellence; for some of its leaders would not disgrace the pages of the *Nineteenth Century* itself. With equal propriety might Mr. Gresswell ask why the criticism of Sir Thomas Watson's paper on "Hydrophobia and Rabies" did not appear in the *Nineteenth Century* instead of the *Veterinary Journal?*

Mr. Gresswell complains of the "peculiarity" of my criticism, even although he admits "laying himself open to it." But indeed he did more than this, for he invited it. Now, I cannot see that when a man throws down the gauntlet to all and sundry, he should stipulate how he is to be attacked. If the ordinary rules of the ring be adhered

[* Some editorial remarks on this statement will be found in another part of our present number.—Eds.]

to, he cannot complain if his opponent discover chinks in his armature or flaws in his argument and directs his shafts accordingly.

But my "*peculiarity*" consists, it would seem, in his not being able to understand my meaning—a fatal peculiarity indeed if the charge was well founded; but I can scarcely believe in his sincerity, and I think his remarks prove the contrary. If I had agreed with all that Mr. Gresswell says on the subject of bleeding, its advantages and the cause of its disuse, I imagine he would soon have made the discovery, and there would have been no need for his diatribe of doubts and difficulties.

The object of his communications seems to have been of a threefold nature. First, to show that bleeding had almost gone out of fashion. Secondly, that the cause of this disuse was owing to too much unity among professional men, especially the members of the medical profession, and which resulted in fashionable practice; or, in plain terms, that we were a lot of tools or toadies in the hands of a few leading spirits, who simply gave the word of command and we were in honour bound to obey. And thirdly, that in doing so we were throwing away good opportunities of effecting our ends simply because it is not fashionable, by depriving ourselves of the most powerful therapeutical agent we possess. Then, a second thought seems to have struck him, for he says, "if I am in error I should be glad to be undeceived." These points, however, seem to fairly represent the object of his communications. Now, if these be true—and he says "he can establish them,"—they form, *I think*, one of the most sweeping charges of "*intellectual toadyism*" that was ever preferred against this or any other profession. To tell us that we are all the victims of that huge deformed monster, with a chameleon skin, called "fashion," and that we practise our profession by its dictates, is certainly not very complimentary to our intelligence, and, in my opinion, cannot be better described than *intellectual toadyism*" or servile intellectuality. But he seems as if he would wish to retreat from this position and limit his charge to "several practitioners of veterinary medicine, and probably the majority of human practitioners," who, he says, he can establish the fact against them as being influenced "*to a very great extent*" by that hydra-headed monster. I am loathe to believe it, but shall withhold my judgment until I see his proof.

His strictures are more applicable to the times when bleeding was used to cure "all the ills that flesh is heir to" than the present. Then, I imagine, the barber-surgeon and

the farrier followed instinctively the practices of a bygone and barbarous age. But now that we have a more correct knowledge of the true relations subsisting between those phenomena termed disease and those powers which we are accustomed to term the *vis medicatrix naturæ*, I do not think they are at all applicable, as we follow, or should follow, the dictates of reason and common sense. Though the knowledge we possess may never rise to certainty, it does not, therefore, follow that we may never depend upon such knowledge as we have.

Now, I endeavoured to show that although bleeding as a therapeutic agent was not so much used now as it was some years ago, it was still sufficiently prevalent; indeed, as I think too much so, according to our knowledge of diseases, and therefore Mr. Gresswell's charge against us was chimerical, and he was fighting a phantom of his own creation.

Nor do I think that it is what Mr. Gresswell decries and describes as union that has brought about the change in the treatment of disease even in the medical profession.

I can scarcely conceive of such a union as he describes, which, when carried to excess, "*always puts a check upon originality and brings about a lethargy antagonistic to progress by putting all on one level,*" unless it were some "*Conservative banquet,*" where the tide of patriotism flows out and strong drink flows in, until they are all *hors de combat* on the floor. I incline to the belief that if we had more union and more interchange of thought we should have more reason, more progress, and probably less of this spoliative remedy. We seem to be too jealous of any little knowledge we possess, and afraid that some one else should be benefited by it. It would act upon the principle of the old proverb, "As iron sharpeneth iron, so doth the face of a man his friend." Men are somewhat like coals or firebrands; "they burn brightest when gathered into heaps."

Let Mr. Gresswell look over the papers read and discussed at such unions as the "*British Medical*" or the "*British Association for the Advancement of Science,*" and say that they advocate or foster the kind of trades unionism that he believes obtains among medical men or veterinary surgeons, and which he seems to think the *beau ideal* for the latter "*in order to guard against constant legal actions on the part of the public.*" Without such, science would be stagnant and confined to the crypt and cloister or the favoured and fortunate few, as there are few better incentives to pursue it unless the study of it for its own sake.

Notwithstanding the high social position of Mr. Gresswell

as being the worthy son of a worthy sire, and enjoying exceptional opportunities of education and practice, I do not think he has proved his case when he says "that we are throwing away good opportunities of effecting our ends" by discarding the fleam, the lancet, and the blood-stick. His recorded cases do not bear out his promises. He tells us, "they were not by any means common cases, occurring successively, but were carefully selected from five years' experience, and were chosen from many hundreds, "to show the practical advantages of bleeding in *certain cases.*" There is some ambiguity about this sentence. If he means that the cases he records as illustrating the beneficial effects of bloodletting are not *common ones* in the sense of their pathological peculiarities and complications, I can scarcely agree with him, for I am unable to see anything *uncommon* about them, either in their origin, course, or termination, that would at all illustrate the advantages of bleeding. If he means that they were chosen from many hundreds of the same kind that he had treated on the same principle but that he only bleeds six cases out of many hundreds occurring had not the same results, they prove nothing. If he means that he only bleeds six cases out of many hundreds occurring successively over a period of five years, again I say they prove nothing, at least, nothing to the point, for it is probably about the same proportion that most sensible practitioners adopt. If we except the first one, I do not see, nor can I think, that any of the others were benefited by the operation, at any rate, I have seen such cases recover as soon without the bleeding. But we must turn our attention to the pathological conditions he describes as indicating a necessity for venesection, and first of plethora. This can scarcely be called a pathological condition, but it evidently plays an important part in Mr. Gresswell's etiology of disease. For he says that *the primary cause of disease in plethoric animals is the abnormal quantity of blood existing in the vessels predisposing it to stagnation and to take on the peculiar condition of inflammation.*" Plethora *per se* is not regarded by the best authorities as inducing a tendency to inflammatory disorders. Dr. Watson remarks that "the subjects of plethora are not, as they might naturally be supposed to be, and as many writers state them to be, peculiarly prone to suffer inflammatory complaint." There is general fulness of the vascular system, but no irregularity, nor any necessary tendency to irregularity, in the distribution of the blood. In fat animals, which are usually regarded as plethoric, and which I apprehend Mr. Gresswell regards as synonymous

terms, the blood is not in abnormal quantity, rather below than above the standard, and I have often observed that the pulse is singularly small. Diseases of fat animals are more of an apoplectic nature than inflammatory. We see this exemplified in the over-fed entire horse, or in those moving mountains of beef and pork that congregate in our show-yards, and also in our brewers and draymen, who, as a rule, die very suddenly from the fatty infiltration of their muscular tissues, especially the heart. "The possibility of there being at any time an increased quantity of blood in the animal body is denied by some observers. The condition is recognised by veterinarians in young fast-thriving animals when fed upon very highly nutritious food." This condition we find in young animals which have been badly fed and then turned into rich pasture, where the highly nutritious food induces a superabundance of blood of an imperfect kind, and which the previously weakened vessels are unable to retain; when on the slightest disturbance to the balance of the circulation in the shape of a cold night, or even "gadding" in a field, the imperfectly elaborated blood passes through the tenuous vessels, decomposition takes place, and the sufferer dies poisoned by the juices of its own body.

I had a very forcible illustration of this last summer, in the case of a farmer who bought two calves in a fair. They were of the ages of from nine to fifteen months, had been badly done, and he put them into a rich meadow pasture, along with ten of his own rearing, about the same ages. About a month after he was surprised, in walking through the field, to find one of them dead and two unable to get up, and until I got there a fourth one was lame. I setoned, and gave medicine to all of them, but to little purpose, for seven out of the ten bought in died within two days of the first one being observed, while those of his own rearing never seemed at all amiss, and continue healthy up to this time. Another fact worth mentioning is that no such cases ever occurred on the farm before, so long as could be remembered. There are some farms adjoining this one on which they lose a few annually in the same way, but later in the season and as a rule those who suffer from such diseases are not very regular keepers. Now, this is what I consider a dangerous plethora, leading to or inducing disease, but not of an inflammatory kind, or that would be benefited by blood-letting, unless indeed it were used sufficiently early to increase the fibrine of the blood, which bleeding is known to do. But in these cases the deficiency is too great to be supplied by such means, and the effects are too apparent before

there be time to remedy them. The *predisposition to stagnation* mentioned by Mr. Gresswell, and so baneful in its effects—is not induced by the quantity, but the defective quality and the weakened condition of the blood-vessels; for the stagnation in these cases always occurs in the muscular parts of the body where the vessels are surrounded with the least resisting tissue.

But Mr. Gresswell's idea of the cause of inflammation seems to be the spissitude or mucosity of the blood, for he says: "*that bleeding is of benefit when the system is surcharged with blood as in plethora, when that excess of blood undergoes inflammatory change, as in inflammatory fever, and also when the blood has localised itself into an active congestion or inflammation.*"

It would seem from this that the blood in Mr. Gresswell's idea is something like a living independent tissue, that can localise itself into an active congestion or inflammation of its own accord, in short, can declare war against all the other tissues of the body. Whenever the globules get too numerous, or too fat and lazy—if I may be allowed the expression—they initiate a strike, refuse to do duty in the old course, and dart through the vessels, which would seem powerless to restrain them; and to make short work with such a refractory rebellious lot, Mr. Gresswell would turn them out to make way for new ones, which I suppose he expects will behave themselves better.

The comparison may be somewhat crude, but strictly speaking it is true to Mr. Gresswell's pathological ideas, which I ventured to say were rather musty, and which he still maintains with an obstinacy that must do him credit: "*that inflammatory action is not due to an alteration in the walls of the blood-vessels, but to changes in the blood itself.*" He has offered us no proof, however, nor attempted to reason on the matter, but contents himself with questioning the facts used in support of the opposite view because they are derived from experiments on the cold-blooded vertebrata. And he is so sanguine that he is right, that he asks me "to reconcile my theory of inflammation in vascular and non-vascular structures."

This opens up a rather large subject, and as my time is at present pretty much occupied, and as I presume your space will be, I shall, with your consent, reserve my remarks on this and a few more topics for your next number.

QUACKERY.

By James Watson, M.R.C.V.S., Liverpool.

Having read the paper of Mr. Walker on this much-vexed question, published in the January issue of the *Veterinarian*, I feel bound to say, in the first place, that much as I admire his enthusiam, I cannot quite coincide with some of his arguments. We know that almost every locality, whether or not it has its qualified veterinary surgeon, is sure to have its "quack," some one who undertakes the repair of the animal machine, while he knows nothing of its construction and whose whole medical or surgical skill consists in being able to put his finger on the jugular vein and strike the fleam into the neck for any or for every disease, or dash a drench into the stomach at random. Yet this is the individual whom Mr. Walker treats to a complimentary "clap on the back" by telling us that such an one has "a perfect right to utilise his knowledge," "to pursue what course he considers best for his own interest," &c. And while this amount of sympathy is expressed for the quack, we are led to wonder why Mr. Walker does not exercise the same amount of charity towards all sections of his professional brethren. If these statements are true in the case of the quack, they must be equally so in the case of every other person, the veterinary surgeon included; but that every man has a right "to pursue what course he considers best for his own interest," is a theory at variance with all ideas of our social relations as well as our individual obligations, and one which, if accepted by Mr. Walker himself, would remove all his objections to the qualified man entering into consultation with the quack. This question of deliberation between the licentiate and the charlatan is one which suggests so much of the absurd and ridiculous that were it not for the strong way in which it is brought forward we would be inclined to accept it as quite incredulous. There is, however, within the profession a form of quackery of which Mr. Walker in his essay does not speak, and which we think equally as scandalous as anything which he has mentioned. It is this, that some professional men, men perhaps of standing and repute, employ non-qualified individuals, not only to assist in ordinary duties, but even to conduct branch practices under the name and title of the principal, who thus obtains cheap services and deals out quack wares in the shape of non-professional advice, for which, under virtue

of his own "V.S." or "F.R.C.V.S.," he charges full professional fees. The individual thus employed may never have been within the walls of a college; but having gained, perhaps, a little practical experience under his master or some other "knowing" one, is thus put forward for mercenary motives.

Surely this is a worse form of quackery than that attributed to homeopathists. Indeed, I consider the allusion of Mr. Walker to homœopathy is exceedingly weak and pointless (except, perhaps, in the matter of tails); and to condemn a standing system of medicine simply because "an influential client" uses a slang expression concerning it, seems to me a very poor way of establishing a case. Although I do not practise homeopathy, I believe there is truth in it and in other systems, just as I believe there is truth in other forms of religion beyond that established by the nation, and I should certainly not attempt to cast ridicule on any professional brother simply because he has, from conscientious convictions, changed his mode of practice.

Let us have *facts* before condemnation; and those "stubborn chiels that winna ding" if put into the witness box might perhaps render evidence that in many cases would put our allopathic treatment to the blush. However, I am not now writing a defence of homœopathy, but wish simply that things may be looked at in their proper light.

By all means let us have the power of suppressing imposition, but let us not mistake a phantom for a reality, and shout for an army to destroy an ant.

Indeed, it behoves us to consider whether this cry of "down with quackery" does not betray a certain amount of weakness within the profession, and a want of faith in its own inherent ability.

I fail also to perceive the lesson which Mr. Walker would have us to learn from the members of the sister profession, who are said to "place a united front against the inroads of quackery in every shape and form."

If by this assertion is meant that such united action is successful in extinguishing quackery, we have but to lift any newspaper in the kingdom to meet with its contradiction and to witness, amongst the advertisements, a species of quackery of which our profession knows comparatively little. At the same time I do not believe that all the quack mixtures, pills, and lotions with which the country is deluged impair in any sensible degree the legitimate influence of the medical profession. And for this reason, that their practice is based upon true scientific principles and is, as a rule,

conducted in such an intelligent, gentlemanly, and enlightened manner as to deserve the confidence and respect of the public. If they have a lesson to teach us relative to quackery, methinks it is in their entire *independence* of it.

In my opinion, those outside "parasites" who occasionally irritate our professional pride are quite as much to be held in abeyance by *individual* effort and example as by united force.

I have, in more than one instance, seen the quack of a locality sink into insignificance, and cease altogether to attempt the treatment of disease, owing to the establishment in the district of a skilful, educated, and gentlemanly practitioner.

In order, however, fully to enjoy this influence, we must, as a profession and as individuals, put away all evils from amongst us, and adopting the advice of St. Paul, "take heed that we walk worthy of the vocation wherewith we are called." We must yield neither to the conceit of appearing above our profession, nor to the fallacy of being "hail-fellow, well-met" with everybody. Let us keep pace with the enlightenment and aspirations of our time, combating its prejudices, examining its judgments, and profiting by its experiences; then may we be looked upon as representatives of our country's intelligence and humanity, and not of its sectional or party feelings, still less of its quackeries, its delusions, and its cant.

CASE OF SUPPOSED PURPURA HÆMORRHAGICA IN A COW.

By Sidney Sturges, Veterinary Student, Royal Veterinary College.

During the summer vacation I was asked to see a cow which was unwell, the subject of the attack being a six-year old beast, the property of a farmer. When I arrived I found the animal in a large well-ventilated stable; and in answer to my inquiries I was told that she had appeared all right until the night before, when she "bated of her milk," and had that morning given none.

On examination I found the pulse small and quick, respiration normal, a defluxion of tears from the eyes and a flow of saliva from the mouth; the extremities were warm and the mucous membranes injected. A gentle aperient only was given, as I could not really say what she was suffering from,

I saw her again the next day. She had materially altered; her head and face were very much swollen, as also the extremities. The flow of tears and the discharge of saliva were much greater; petechial spots existed on the roof of the mouth and under the tongue; the udder was very red and hot, and the secretion of milk still arrested. I now suspected the case to be one of purpura, although I had never read of this disease occurring in the ox tribe.

On visiting her the next morning she was much worse. The swellings had increased to such an extent as to almost close the eyes, and there was a sero-sanguineous discharge from the nostrils. There was also an effusion on under part of the abdomen and on the inner side of the thighs. Large sores were forming on various parts of the body, especially over the lumbar region. The skin of the udder had begun to crack and peel, and cracks also existed at the back of the knees and front of the hocks. A thin discharge issued from the sores; the respiration was now very much accelerated and laboured, and accompanied with a snuffling noise.

The symptoms were about the same the next time I saw her; but the swelling had gone on increasing, and the prostration of strength was great; the urine was now high coloured and had a strong smell.

When I arrived the next morning I learned that my patient had been dead about eight hours. I also found to my great annoyance that she had been skinned and the intestines taken out, so that I was unable to judge of the true nature of the effusion, which had taken place beneath the skin, and could not tell if there had been any effusion into the abdominal cavity. The intestines and stomachs had also been cut open and were covered with dirt, so that I could make nothing out of them. On opening the chest a large quantity of serum was found in the cavity.

The *lungs* were of a deep red colour, and full of thick tarry blood, which ran out when an incision was made into them.

The *heart* was of a normal size and colour. The right auricle and ventricle were full of thick dark blood; the left ventricle was empty and of a deep purple colour beneath the endocardium. The valves were opaque and thickened.

The *liver* was larger than natural, and its structure easily broken down when pressure was applied with the finger. It was also full of thick blood.

The *bladder* was slightly reddened in colour.

The *brain* was very much congested.

From the commencement of the disease the cow was inclined to feed, and as she was very thirsty I ordered her

two gallons of milk *per diem* or even more if she would take it.

The treatment was similar to that adopted for the horse in cases of purpura.

I inquired as to her food and found she had been living on grass, and that she had been supplied with water from a running brook.

EARLY LACTATION IN A PREGNANT HEIFER.

Communicated by T. E. J. Lloyd, Prescot Road, Liverpool.

A farmer living in the district of Aughton having a heifer one year and nine months old placed her with a bull, subsequently to which everything seemed to favour the opinion of her being pregnant. Five months after her supposed impregnation she was noticed to be discharging milk from her udder in the fields; this would be about the 12th September. On the same day Mr. W. E. Brown, veterinary surgeon, of Ormskirk, was asked to look at her, but although not able satisfactorily to account for her "milking herself," he gave his opinion that she was with calf, and that the calf was alive. He advised that she should be left to nature, and that her owner should not have the milk drawn from the gland.

A day or two after this a gentleman from Liverpool (but whose name I could not ascertain) called, and having a good reputation as to his knowledge of cattle diseases, he was told about the heifer "milking herself," when he desired to see her. After having investigated the case by manipulation, &c., he said that the heifer had aborted, and that it was absurd not to milk her, it being a great cruelty to leave the udder so full. She was accordingly milked with the other cows, and yielded as much as three quarts daily. Her owner continued this practice, although Mr. Brown had condemned it, and had also told the persons in charge of her that the calf would surely thereby be starved, for they were robbing her of its nutriment.

Upon the 1st December she was noticed to be in pain, and Mr. Brown was again called to see her. When he arrived he found her straining very violently, and upon inquiry he found that no change had been made in her food or management to account for the symptoms. She was,

however, rather costive, the evacuations being small in quantity and of a very dark colour. On examining her *per vaginam* he found that there were no evidences of approaching parturition, and accordingly thinking that she was suffering from chiefly alimentary derangement he gave her a saline purgative, and left instructions for him to be informed should she continue to strain. At 6 p.m. a messenger arrived and asked to see Mr. Brown personally. He informed him that about 1 p.m. the heifer had aborted, and asked if he would like to see the calf. He was answered in the affirmative, and Mr. Brown drove over the next morning to examine the calf, which he found to be a male, fully formed, but with a mere rudimentary covering of hair.

The heifer had been put to the bull in May, so that she was now only in the eighth month of pregnancy.

QUALIFICATION.

By "Reflection."

Sir,—A good deal has been written, from time to time, in reference to the possession of the diploma of the Royal College of Veterinary Surgeons, and much could still be written as to the advantage, or otherwise, of the possession of such a document. It is easy to understand the motives the public have in employing non-qualified men, but it is difficult to comprehend the acts of some men of high standing in the profession. It is an undoubted fact that, in Ireland, things are done which would not be tolerated or thought of in England. To my certain knowledge the Government of Ireland make appointments of men who are not only known for their non-qualification, but who are without that experience which would render them competent, and this is done when qualified and competent men are available.

How is this to be explained? Has caprice or prejudice any influence in such appointments? One would be induced to think some such influence exists. I can readily draw a distinction between qualification and competency. A man may have passed the ordeal of an examination as instituted by the Royal College of Veterinary Surgeons and gained his diploma, and, at the same time, may be egregiously incompetent to fulfil certain duties required of him, simply from an absence or want of opportunities of gaining experience in these duties. If this be so, how much more

should we complain when men who do not hold a recognised diploma, and who, from their antecedents, are totally unfit and incompetent, to discharge such onerous duties as cattle inspectors are selected? It appears to me that it is high time for inquiries to be made as to the truth of what I have hinted at.

It is clear that the public in Ireland have been so long ignorant of the nature of the qualifications of a veterinary surgeon that they are oblivious of the fact, and thousands of employers care but little for qualification so long as their work is done to their satisfaction. It is different, however, I take it with regard to public appointments, particularly if these appointments are made by Government, because it is presumed that men of high professional standing are cognisant of facts such as those mentioned. If none but unqualified men are in residence, there would be some excuse for making such selections: it would, indeed, be "Hobson's choice," but when men of experience and of good repute are in residence, and possessing the only recognised qualification, it is, as I have said, not easily understood.

One of your correspondents said some time ago, if memory serves me, that much might have been saved if he had known that we were not to be protected. It may be difficult to induce the legislature to frame a protective law for our profession, but agitation should be carried on.

The popular President of the Royal College of Veterinary Surgeons, I hope, will, ere long, take his seat in that assembly where he will have an opportunity of making known the wants of the profession. Doubtless, lukewarmness has been manifest in high quarters. It was all very well to create a number of Fellows, giving some a false position and ignoring many worthy men, but there is something wanted of more vital importance than the making of Fellows. What advantage has been gained by any man who has been so honoured? It has not the value of a grain of mustard seed; but it has caused a good deal of ridicule, and not without just cause.

Pathological Contributions.

CATTLE PLAGUE.

The latest report from St. Petersburg announce that cattle plague exists in the governments bordering on Austria and Germany, and in those adjoining the Black and Baltic

seas, namely, Bessarabia, Podolia, St. Petersburg, Taured, and Kherson.

A report from Buda Pesth, dated 10th December, says that the cattle plague has not disappeared from South Hungary; that Croatia, Slavonia, and the military frontier are free from the disease, and that Moravia has been declared healthy.

A later report from Buda Pesth, dated 17th December, says that cattle plague has appeared in two or three fresh districts of South Hungary, and disappeared in two or three others.

A report from Vienna, dated 19th December, announces an outbreak of cattle plague in the Commune of Hernals.

A report from Czernowitz, dated 5th January of the present year, states that the cattle plague in the Bukowina exists at the present time only at the quarantine station of Nowosielitza and in the town of Czernowitz.

A communication from Vienna, dated 7th January, states that according to a report, dated 31st December of last year, cattle plague was on the increase at the province of Galicia, and still existed in Bohemia, Bukowina, and Lower Austria.

A notice from the Royal and Imperial Local Administration at Vienna, dated 9th January, states that cattle plague, which, according to an announcement made on the 19th December, had broken out in a dairy at Hernals, in the Hernals district, has not extended further since that date, and was officially declared extinct on the 9th instant. Lower Austria is therefore at present free from cattle plague.

Those measures which were ordered to be brought into operation by a minute issued at Vienna on the 6th September, 1877, respecting the duty of cattle owners to give immediate notice of every attack recurring among their cattle, and also the prohibition to remove cattle for slaughter from the markets at Vienna to other places, remain in force until further orders.

A report from the prefect of the district of Jassy, dated 14th November, states that since the 24th October the cattle plague has broken out in the villages of Mormesti and Carba, in the parish of Rediu Mitropolice, sub-district of Copon, Mironesa, in the parish of Mironesa, sub-district of Stairne; in Slobonzia, in the parish of Cuirea, in the small town of Trei Fontîni, in the parish of Baciunin (Locola ?), sub-district Codru, and in the other three quarters of the town of Jassy.

That the most stringent measures have been taken to

stop the disease; amongst others it has been forbidden to move horned cattle unless the drivers can present a certificate showing that they come from uninfected places; it is also forbidden to allow cattle which are being moved and remain in inn yards for the night to mix with the cattle belonging to the parish in which the inn is situated.

The cattle plague, being very contagious, has spread in many places, but has been kept under as much as possible, and may be considered to have ceased in the villages of Todirel, Ceren, and Barnova; in the parish of Ciurea, subdistrict of Codru.

PLEURO-PNEUMONIA.

PLEURO-PNEUMONIA was reported to exist during the month of December in the following counties:

Cambridge, Chester, Cumberland, Derby, Essex, Hertford, Huntingdon, Kent, Lancaster, Leicester, Middlesex, Norfolk, Northampton, Northumberland, Notts, Stafford, Suffolk, Westmoreland, York, North Riding; ditto, West Riding; Isle of Ely, Soke of Peterboro', the Metropolis, Denbigh, Glamorgan, Aberdeen, Banff, Clackmannan, Edinburgh, Fife, Forfar, Kincardine, Lanark, Perth.

FOOT-AND-MOUTH DISEASE.

REPORTS of the existence of foot-and-mouth disease in the month of December were received from the following counties:

Bucks, Chester, Cumberland, Essex, Hertford, Huntingdon, Kent, Lancaster, Norfolk, Northampton, Northumberland, Notts, Salop, Somerset, Sussex, Warwick, York, North Riding; ditto, West Riding; Isle of Ely, the Metropolis.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of December, 1877, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise.

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . . .	Foot-and-Mouth	...	12	...	...	12	Slaughtered under the instructions of the Privy Council.	35	3466	...	...	3501	Slaughtered under the instructions of the Privy Council.
Boulogne . .	,, . . .	,,	4	...	...	...	4	Ditto	137	...	...	...	137	Ditto
Hamburg . .	,, . . .	,,	...	2	...	...	2	Ditto	...	482	...	...	482	Ditto
Harlingen . .	,, . . .	,,	...	6	...	...	6	Ditto	179	1685	...	...	1864	Ditto
Rotterdam . .	,, . . .	,,	...	22	...	...	22	Ditto	262	3292	...	...	3554	Ditto
Total Diseased Animals .		Foot-and-mouth	4	42	...	...	46	Total Healthy Animals .	613	8925	...	...	9538	
	Total . .		4	42	...	...	46							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of December, 1877.

Veterinary Department, Privy Council Office,
Jan. 14th, 1878.

Facts and Observations.

Entozoal Contributions.—On the 13th of last December Dr. Cobbold received from Mr. South a dried preparation of the skin of a dog extensively infested with *Demodex folliculorum*. On the same day Mr. Reynolds, M.R.C.V.S., brought two examples of *Tænia crassicollis*, vomited by a cat. A box was also received by post from Mr. W. Awde, V.S., of Winston, near Darlington, containing a specimen of *Tænia expansa*, picked up in a field where sheep had been feeding. On the 22nd of January Mr. W. Coupe, V.S., Stoke-upon-Trent, forwarded part of the large intestine of a dog; and in a letter he stated that the "French poodle" died suddenly, but he does not attribute the death of the animal to the strongles which he found "embedded in the gut."

Trichonema arcuata.—This is the young state of *Strongylus tetracanthus*. Mr. George Goodacre, M.R.C.V.S., having forwarded to Harley Street, my former professional residence, "part of the colon of a two-year old colt," showing this parasite, I desire, *particularly*, to request future contributors of entozoa to send their donations to the College. Mr. Goodacre, speaking of the intestine of his patient, says: "Thinking it will be too far decomposed before it reaches you I send it to your private residence." Mr. Goodacre thus thought to facilitate my examination of the specimen whilst it was comparatively fresh. Old pupils and other friends will kindly accept this intimation of my wishes.
[T. S. Cobbold, M.D., 74, Portsdown Road, Maida Hill, London, January 25th.]

Hydrophobia.—It is asserted that this disease is becoming a very serious peril in Liverpool. In addition to the numerous cases already reported, the townships of Roby Huyton, Prescott, Knowsley, Fairfield, and West Derby, have been visited by dogs suffering from the disease, and large numbers of sheep, cattle, dogs, and poultry that have been bitten, have had to be destroyed.

THE VETERINARIAN, FEBRUARY 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE HIGHLAND AND AGRICULTURAL SOCIETY AND THE ROYAL COLLEGE OF VETERINARY SURGEONS.

AT the last Meeting of Council a discussion took place on the President's motion relative to the admission of the holders of the Highland and Agricultural Society's Certificates to the Examinations of the Royal College of Veterinary Surgeons. The effect of the proposition would be to allow the holders of the certificate who, it must be remembered, have already completed the required period of study at one of the recognised veterinary schools, to pass all the examinations at one time, instead of being compelled to distribute them over a considerable period as would have been necessary if they had determined originally to become members of the Royal College, instead of being content with a qualification, which is not recognised as an authority to rank with the members of the profession. As we understand the matter, the value of the qualification which is implied in the possession of the certificate is not under question; nor are the attainments of the holders of the certificate under discussion. The document, whatever may be its value does not confer upon its holder the position of a member of the veterinary profession; and when he descends to the expedient of calling himself a veterinary surgeon on such a plea he exposes himself to the charge of misrepresentation at the very least, and no amount of skill, experience, and professional knowledge can be argued in extenuation of the fact that he pretends to be what he is not.

In defending their somewhat anomalous position the Highland and Agricultural Society of Scotland may—we believe have—urged that the examination to which the candidates are subjected is quite as stringent as that which students pass for the diploma of the college. Without any prejudice

this much may be admitted, the fact does not alter the position which we assume, viz. that there is only one way of becoming a veterinary surgeon—by obtaining the diploma of the college.

What particular object the Highland Society has in view in offering to veterinary students a certificate and under what circumstances students who are competent to submit themselves to the Examination Board of the Royal College, accept the alternative of an examination quite as severe we are told, of a society having no power to admit to the membership of the college, we do not propose to inquire; the result is the occurrence of divisions among men who ought to form one harmonious whole, having but one object in view.

The point with which we are chiefly concerned is this; a number of men who have studied in a legitimate way have from some cause been led to accept a certificate in lieu of a legal diploma. At present this error is irremediable; whatever their qualifications may be, they cannot enter the veterinary profession without again becoming students and going over the curriculum again for three years. The President proposes to allow these men to submit to the test of a full examination in order that if successful, they may be received as members of the profession. We can hardly understand that this proceeding can be construed to mean letting men in by a "side door." Certain advantages would be conferred on them by the scheme, but after all if the candidates could satisfy the examiners of the Royal College of Veterinary Surgeons, they would prove their claim to the title of membership. Some months will elapse before the subject is discussed again, and in the meantime the members of the profession will have an opportunity of expressing an opinion.

OUR ACCUSERS.

Our readers will observe with a surprise equal to our own an accusation which Mr. Gerrard has thought fit to

bring against us in the conduct of our journal. Without taking any undue credit to ourselves we can truly say that the *Veterinarian* has always aimed at being independent of sect or party, and that it has never refused insertion to communications of sufficient interest to the profession come from whom they might. Indeed, the *Veterinarian* is the journal of the profession, and in that sense has ever been what the profession choose to make it. We are not unmindful of the statements which have been made by interested parties to destroy its reputation, and to lessen its influence; but all these things we can afford to pass by. We cannot, nevertheless, refrain from saying that the partiality of which we are accused in this particular instance belongs to Mr. Gerrard. How otherwise is the fact to be explained of his having sent the reply to Mr. Gresswell's communication to another journal, and then making his own act the ground of a complaint against us.

Translations from Continental Journals.

DA SILVA LIMA ON HÆMATOZOA.

[*From the French.*]

[This memoir originally appeared in the *Gazeta Medica da Bahia* for September, 1877; the French translation, from the Portuguese, being afterwards published in the *Archives de Médecine Navale* for December, 1877. The full title runs:—"New phase of the question relating to the parasitic nature of Chyluria. Discovery of the adult representative of the 'Filaria of Wucherer.' Par le Dr. Da Silva Lima, Médicin de l'Hôpital de la Charité de Bahia."—EDS.]

THOSE of our readers who have followed the progress of the discussion which has arisen during these last years, as much in our country as elsewhere, on the subject of chylous hæmaturia will, without doubt, learn with great interest a very important fact which has come to us from Australia, and which seems destined to dissolve the problem, so laboriously studied, of the pathology of this disease.

This fact is nothing less than the discovery of the progenitor or parent worm of the microscopic Filariæ found, for

the first time, by Wucherer, at Bahia, in chylurous urine, and since then by divers observers in other tropical regions, not only in the urine, but also in the blood of patients affected with elephantiasis and certain diseases of the skin.

But, before relating this fact, which comes to us accompanied with commentaries and deductions which a discovery of such value demands, we will here take the liberty of recalling the principal phases of the study of chyluria considered as a parasitic affection.

Our distinguished colleague, Doctor Th. Victorino Pereira, in his inaugural thesis, has very judiciously divided the history of hæmato-chyluria into four periods:—1st, Period of the unknown origin; 2nd, Egyptian period; 3rd, Brazilian period; 4th, Indian period. It is actually necessary to add (5th) the Australian period.*

In the first, as says our colleague, the hæmaturia was considered as an eliminatory flow of the fat that was not burnt in consequence of a vice of the hæmatosis; in the second, as due to the parasite of Bilharz; in the third, as re-asserting itself in consequence of the presence of the filaria of Wucherer; in the fourth, as a symptom of the infection of the blood by a new hematozoon, this same Filaria of Wucherer; in the fifth, we ought to add, it will be regarded as one of the symptoms of the helminthiasis occasioned by the adult representative of these microscopic embryos.

Leaving aside the first epoch of investigation of the hæmato-chyluria (an epoch of hesitation, of conjectures and of theories more or less ingenious, that subsequent facts began to shake and which recent discoveries have deprived of all the interest and all the importance in which they rejoiced), we shall occupy ourselves with those epochs during which this affection began to be considered under an altogether different aspect—thanks to clinical observation and to the revelations of the microscope, which came to replace purely speculative controversies.

In 1851 Bilharz discovered the parasite which now bears his name (*Bilharzia hæmatobia*, Cobbold), and the association of its presence with the hæmato-chyluria of Egypt; a fact confirmed by other observers in this same African region, and later by Dr. G. Harley in the urine of a patient who contracted the disease at the Cape of Good Hope.

* To this must also be added a 6th or Chinese period—relating to the discovery of the larvæ and their metamorphoses within the stomach of the mosquito (*Culex mosquito*). This has been communicated to Dr. Cobbold by Dr. Patrick Manson, who is stationed at Amoy, China. See a letter in *The Lancet* for January 12th, 1878 (p. 69).—Eds.

In August, 1866, our regretted collaborator and friend, Dr. Wucherer, occupying himself, at the invitation of the learned Griesinger, to verify here the preceding discovery, as well of this nematode* as of its eggs, found in the chylous urine of one of our patients an embryonic nematoid altogether unknown. A few years after, this important fact was also confirmed in the United States by Salisbury, in the Antilles by Crevaux, and in India by Lewis.

Here and in these regions the constant presence of this worm in the milky urine became notorious.

It seems proper to recall a circumstance very remarkable by its singularity, which, at a given moment, if this fact remains unique till now, has had a considerable influence on the pathological explanation of the hæmato-chylous urine. At the moment when Wucherer was seeking for the *Bilharzia hæmatobia* he found instead of it an unknown worm.† Later on, Dr. Cobbold, studying the embryology of this fluke-parasite in the urine of a patient who had resided in Africa, discovered the eggs of a nematoid which contained embryons perfectly resembling those of Wucherer.

In 1872 Dr. Lewis not only verified at Calcutta the presence of these nematoids in the embryonal state in the chylous urine, but, what is more extraordinary, he discovered them equally in the blood of the patients affected with chyluria, diarrhœa, elephantiasis, and even in persons appearing to be in good health.

He proposed for the designation of this new species of non-adult helminth the provisional denomination of *Filaria sanguinis hominis*. Some time after, P. Sonsino also discovered the same animalcules in the blood of the hæmaturics of Egypt.

In 1875 Dr. O'Neill on the West Coast of Africa, and our studious colleague, Dr. Araujo at Bahia, encountered, almost at the same time, the same microscopic Filaria, proceeding from the skin affected with a disease peculiar to negroes, which they called "craw-craw," and to which Filaria our compatriot gives the name of *Filariose dermathemica*.‡ Recently a distinguished medical man, Dr. Felicio dos Santos, encountered the same embryonal nematoid in the blood of an individual affected with elephantiasis—a unique fact up to the present time in relation to patients of

* In the French Dr. Lima is made to say "Ce nématode," but clearly the words ought to be "ce trématode," as the author refers to *Bilharzia*. —Eds.

† A similar observation has been made by Dr. Sonsino, and commented on by Sir Joseph Fayrer in 'The Lancet' for August, 1876 (p. 284).

‡ See 'Arch. de Méd. Nav.,' tom. xxiv, p. 229.

this kind, and which since has never been verified at Bahia in spite of all tentative efforts made to do so.

Such are, in short, the facts relative to the coexistence of animalcules with hæmato-chyluria, and with other affections which do not appear to possess in common the least pathological analogy. The *Bilharzia* associated with hæmaturia and dysentery in Egypt; the Filaria of Wucherer associated with the same affection in Egypt, Brazil, the Antilles, the United States, and India, and, moreover, in this last-named region and in China associated with the elephantiasis of the scrotum and with diarrhœa, and with "craw-craw" on the West Coast of Africa.

Let us now see the interpretation of these facts.

The presence of the *Bilharzia* is considered as a cause of hæmaturia and of one form of dysentery in Egypt.

The eggs of this parasite have never, up to the present time, been found in the urine of the hematurics of Brazil; no adult animal has ever been discovered in its seat of predilection. As much in consequence of the rarity amongst us of cases of death by chylous hæmaturia as by the difficulty of obtaining the means of making autopsies, Wucherer made for a long time vain efforts to discover some eggs. This allows us to presume that this parasite is very rare or that it is not to be found in our climate. But its coexistence with our Filaria in Africa in the same individual cannot be held in doubt, according to the observations of Cobbold and Sonsino. Up till now it has not been established in India that the *Bilharzia* has been found there.

What rôle do these parasites or their larvæ play in the pathogeny of the hæmato-chyluria and dysentery in Egypt and at the Cape? This still remains to be determined.

Concerning the Filaria of Wucherer, which interests us more particularly, let us see what have been the principal opinions put forth up to the present time on its presence in the chylous urine, the blood, the lymph, &c.

Our illustrious collaborator has made known in the *Gaz. Méd. de Bahia* his important discovery under the modest title of "Preliminary Notice on a species of Worm at present not described;" still more modestly he formulated in the following manner his judicious and prudent conclusions:—

"It would be rash on my part to put forth a conjecture on the coexistence of these worms of the hæmato-chyluria, and on the etiological signification which they might have? I shall therefore abstain until I have been able to make more ample investigations, and until I have been permitted to examine the corpse of a hæmaturic, which has not yet been

possible." (*Gazette Médicale de Bahia*, Dec., 1868, p. 99.)

In the four articles that the learned observer published the following year we do not find a word on the etiological signification of these helminths; he hardly mentions them; he admits that he is ignorant of what manner and in what state of evolution the progenitors of these animacules penetrate into the human body, how they arrive in the kidneys, what is the destiny of these embryos once that they have been expelled with the urine, &c.

Since Wucherer, although many works have been published either in the form of articles in the journals or in the form of theses, no important fact has been produced, nor has opened to the scientific world any vast field of conjectures or of theories. Some have wished to see in the presence of the worm in the embryonal state in the chylous urine only a mere coincidence; others have considered it as the principal, if not the unique, cause of the disease. Among these last some supposed that the embryos were really the cause, others thought that it was only the adult animal which played this rôle; they presumed that it existed in some hidden part of the organization, such as the blood-vessels, the lymphatics, the kidneys, the bladder, &c.

The discovery of Lewis and the later facts established by Manson and by other observers who encountered the Filaria of Wucherer in the blood and in the lymph of patients affected with elephantiasis of scrotum and with chyluria, as well as the coexistence of these diseases, not only in the same countries, but also in the same individual, led to the conclusion that their parasitical etiology was in common. There was thus equally established a connexion between these two diseases and a peculiar eruption in the vesicules of which O'Neill, in Africa, and Dr. Silva Aranjo, at Bahia, found the same helminths in patients who were not affected with chyluria.

Thus, with the presence of the Filaria of Wucherer in the economy would correspond three distinct pathological forms, and further, they are determined by the seat of this animalcule or of its parents. The symptoms are, in certain cases, chyluria; in others, elephantiasis, lymphatic varix, craw-craw, &c.

With regard to this subject opinions vary very much; some deny, others hold in doubt, as not being proved, the verminous nature of chyluria; there have been found, notwithstanding, vigorous defenders of the theory of helminths. Among these defenders we shall cite in the first place our

distinguished colleague Dr. Almeida Conto, who has sustained this opinion in his thesis concours, and particularly in a remarkable article published in the *Medical Gazette of Bahia* (January and February, 1877).

Such is the state of the question as regards chyluria observed at Brazil and in other intertropical countries. As to the relation which exists between this disease and elephantiasis, which for many years have frequently been seen to coincide in the same individual at Rio de Janeiro, we have not observed it here. As to that which concerns the Filaria of Wucherer, so often encountered in the blood of chylurics and of individuals affected with elephantiasis in India and in China, it has been proved only twice at Brazil; the first, in the blood of the papules of a cutaneous eruption; and the second, in that of a subject affected with elephantiasis.

It is under these circumstances that the fact that we are about to relate has come to our knowledge. If it be confirmed, it promises peremptorily to decide the question in favour of those who hold the parasitic etiology of chyluria.

It is Dr. Cobbold, the eminent English helminthologist, who has first announced, in *The Lancet* (No. of 14th of last July), the discovery of the adult Filaria, of which the embryos have so much preoccupied, during these last years, the observing medical men of the intertropical countries.

He says that the brilliant discoveries of Lewis, continued in Egypt by Sonsino, and by Welch and others in England, have been verified by the observations of Dr. Bancroft in Australia. He has found in the sexually mature state the form at least of one of the species of microscopic hematozoa.

Already, Dr. Cobbold had found, in 1876, in some blood sent from Australia, in capillary tubes, from a hæmaturic, a nematoid egg. This fact almost certified the existence, in the human body, of an adult worm. Dr. Roberts, of Manchester, who had sent these tubes to Dr. Cobbold, had already verified, in the blood that they contained, a microscopic hematozoön, discovered in Australia by Bancroft. This doctor (Bancroft), at the instigation of Dr. Cobbold, actively continued his investigations; they resulted in the communication of the following new facts, addressed to Dr. Cobbold, and dated from Brisbane, Queensland, April 20th, 1877.

"I have with great ardour followed up the research for the parent parasite, and I am happy to tell you that I have found five specimens of worm, which I hope to send to you as soon as I shall have a safe opportunity. I reckon about twenty cases of this parasitic disease, which, I believe,

explain the chyluria, a certain form of hæmaturia, a form of spontaneous lymphatic abscess, a particular soft varix of the groin, a hydrocele containing a fibrinous liquid, another with a chylous appearance, also some forms of varicocele and orchitis. All this I have verified.

"In the colony there are found no cases of elephantiasis of the legs or of the scrotum; but, by the description of these affections in the memoir on the diseases of the skin, and of other diseases of India by Fox, Farquahar, and Carter, and by Dr. Roberts's article on these last named in a book on the affections of the urinary passages, I think that the parasitic nature of these diseases will be established.

"The worm is, more or less, of the thickness of a hair, and from three to four inches in length.

"The Filariæ described by Carter came forth in prodigious numbers by openings placed towards the centre of the body.

"My first specimen was found, Dec. 21st, 1876, in a lymphatic abscess of the arm. It was dead. I obtained four other living individuals from a hydrocele of the spermatic cord; they found themselves stopped at the orifice of a special trochar that I employ for puncture. I preserved them alive during one day; I had much trouble to separate them from each other. When the worm was plunged in pure water it stretched itself and then remained perfectly still. In this state it was readily extracted from hydroceles, with a great trochar, from the patients known to be attacked with Filaria.

"I will soon send you more details about my cases and the worms."

"Such is," says Dr. Cobbold, in finishing his article, "the report rendered of these discoveries that Dr. Bancroft gives us, and according to the brief description which he traces of the parasite I propose to give to this adult nematoid the name of *Filaria Bancrofti*."

He adds that he shares the opinion of the Drs. Bancroft, Lewis, Sonsino, Fayrer, and others, who think that a considerable group of morbid states, of which the manner of origin is yet very obscure, proceeds from the injurious influence of the microscopic Filariæ.

The discovery of Dr. Bancroft has an incontestable importance, whether one arrives or not at being able to demonstrate with certitude that the nematoid, of which the author of the preceding article has given a name so advantageously known in the scientific world, is the progenitor of all the microscopic Filariæ found concurrently with the

symptoms of chyluria and of other enumerated morbid states. These animals in the embryonic state have not, in truth, a very great resemblance to each other, according to the descriptions given by the observers of divers countries; nevertheless we expect with confidence the demonstration of their perfect specific identity, and particularly of their common and legitimate affiliation with the adult worm which has just been discovered in Australia.

The more extended and minute works which the Drs. Cobbold and Bancroft promise us will, perhaps, disperse in great part, if not totally, the doubts which still exist in the minds of some medical men as to the veritable origin and the nature of the hæmato-chyluria, and of the affections which offer, as a common bond with them, the presence of the same helminth in the urine, the lymph, and the blood.

Appendix.—By Mons. A. Le Roy de Méricourt, Médecin en Chef de la Marine et des Colonies; Officier de la Légion d'Honneur.

Our excellent confrère and friend, Dr. Silva Lima, devotes the close of his article to an expression of the regret that he feels at the oblivion in which the learned English helminthologist has left the venerated name of Dr. Wucherer, when he (Dr. Cobbold) quotes in his memoir the indefatigable observer whose labours have contributed to the elucidation of this question. The name of Wucherer deserves, however, to figure in the first rank in the chronological order of investigators. Dr. Cobbold had already previously associated with this subject the names of Leuckart, Vix, Bastian, Heller Lewis, and Salisbury (*Med. Record*, No. 1, p. 6). This neglect, certainly involuntary, on the part of the English helminthologist (in the article in *The Lancet* of last July 14th) is repaired in a new article from the same *savant*, on the *Filaria Bancrofti*, inserted in the same periodical, No. 3, of Oct. 6th, 1877. Doctor Da Silva Lima will have welcomed, with a lively satisfaction, this new and legitimate homage paid to the memory of Wucherer. Here, moreover, is the substance of Dr. Cobbold's last article, which will complete the communication of our distinguished contemporary of Bahia.

Last 28th August, Dr. Cobbold received from Dr. Bancroft three tubes containing some adult female Filariæ, preserved in glycerine, and a fourth containing some embryos and the eggs. The microscopical examination allows the following characters to be given to this species:—*Filaria Bancrofti* (Cobbold), body capillary, smooth, of a uniform volume. The

head furnished with a simply circular mouth, denuded of papillæ; neck straight, about a third of the thickness of the body. Tail of the female simple, suddenly narrowing. The reproductive orifice is situated very near the head, the anus close to the extremity of the tail. Length of the female three and a half inches; thickness, $\frac{1}{90}$ of an inch. Embryos from $\frac{1}{200}''$ to $\frac{1}{125}''$ in length; eggs, $\frac{1}{1000}''$ by $\frac{1}{1650}''$.

The female worm only has been found.*

In giving the name of Dr. Bancroft to this sexually mature worm Dr. Cobbold wished to recall at once the origin and the date of the discovery (Brisbane, Dec. 21st, 1876). This appellation ought in no wise to diminish the merit of Lewis, who first gave to the immature worm the name of *Filaria sanguinis hominis*. Drs. Salisbury and Cobbold had previously found the embryos still enclosed in the chorion, which should be the young of the *Filaria Bancrofti;* but it was reserved to Lewis to discover the hæmatozoal character of the young of this worm and to find them in the blood. If the relation of origin established by Dr. Cobbold between the embryo and the *Filaria Bancrofti* should come to be verified, it would be absurd to call the adult worm *Trichina cystica*; however, Salisbury has given this name to the parasite found in the urine. In conclusion, the adult *Filaria sanguinis hominis* (Lewis) and the *Filaria Bancrofti* (Cobbold) are evidently no other than the same species under two denominations. Cobbold goes farther, he expresses the opinion that all the different larval forms separately described by Salisbury, Lewis, Sonsino, Wucherer, Crevaux and Corre, Da Silva Lima, Bancroft and himself, must be referred to one and the same species. If the denomination given by Lewis is adopted to designate the adult worm in preference to that of *Filaria Bancrofti,* Cobbold does not make any objection.

A. Le Roy de Méricourt.

Extracts from British and Foreign Journals.

THE CATTLE TRADE.

A large deputation from the Foreign Cattle Trade Association, representing besides England, Scotland, Ireland, and Wales, had an interview with the Duke of Richmond and Gordon at the Privy Council Office, Whitehall, on Tuesday, January 22nd, to protest against any restrictions

* By a slip of the pen this passage stands "Le *mâle* du ver seul a été trouvé." It should have been "La femelle," &c.—Eds.

being placed upon the importation of cattle from abroad in the Bill on the subject to be shortly introduced. Mr. Jacob Bright, M.P., introduced the deputation, stating that they were principally cattle importers. They had a great deal of fear with regard to the proposed further legislation on the subject of cattle, and believed that further restrictions on the importation of cattle would not only seriously interfere with their interests, but with those of the country at large. Several other members of the deputation having spoken, the Duke of Richmond and Gordon, in reply, said: "The subject of the deputation is one no doubt of very great importance, and I have listened with much interest to the statements made by gentlemen and practical men who have come here to-day. So important is the subject that, as you are all aware, Parliament thought fit to appoint a Select Committee of the House of Commons to inquire fully into the subject matter of cattle disease in this country; they sat for some time, and, as you know, took evidence, and have made a report to both Houses of Parliament. I do not think this would be the time or place for me to comment upon the evidence or the report of that Committee; I can only say that in consequence of the great importance of the whole question the Government have thought fit to introduce a measure respecting it. That measure I shall before long have the honour of introducing in the House of Lords, and I think that you will fully understand that under these circumstances it would be impossible for me to enter into details of the measure until I have explained it in my place in Parliament. All I can say is that I will give due consideration to the statements which you have been good enough to make to me to-day."

LIVE STOCK IN QUEENSLAND.—THE QUESTION OF PROHIBITION.

An interesting report has been prepared for the colonial secretary by Mr. P. R. Gordon, chief inspector of stock in Queensland, for the year ending December, 1876, and published by the Colonial Government. With regard to sheep, it appears there has been a considerable decrease, although, with the exception of occasional lingering cases of worm disease, the flocks have been unusually healthy. In 1875 there were 7,101,381 sheep in the thirteen pastoral districts into which the colony is divided, but in 1876 the number was 6,687,279, showing a total decrease of 414,102, or over 5½ per cent., on the number returned for 1875. It appears,

however, that the sheep on which assessment was paid numbered 7,025,355, being 338,076 more than those returned to the commissioners, and thus leaving only an *actual* decrease of 76,026 on the previous year. The difference arises through many owners having paid their assessment to the treasury without having made the required return to the Commissioners; but, on the other hand, odd numbers are in many instances entered in the treasury books as a thousand (portions of a thousand being paid for at the same rate as a thousand). The correct total, therefore, lies between the two. I estimate it at 7,000,000, and the decrease on the previous year at, in round numbers, 100,100. The cause of this decrease is attributed to the substitution of cattle for sheep, and, in more than one district, to the enormous increase of marsupials.

For the improvement of the flocks, upwards of 1197 stud sheep were imported by sea during the year; and the only rams imported border-wise were 450, which were valued at £2 10s. per head. The lambing had been generally good, the average being from 70 to 90 per cent. There had also been great improvement in the clip, the number of bales of wool being greater than last year, even with a decrease in the number of sheep. The flocks have been very healthy during the past year, and the whole of the Australian continent is now declared free from scab.

Cattle breeding is fast gaining ground in Australia, but breeders have been discouraged by disease. The total number of stud cattle introduced into Queensland last year were 728 stud cattle, of the declared value of £27,233, were imported by sea, and 1019 cattle, of the approximate value of £19,191, were introduced overland, as under:—Imported by Sea.—From New South Wales: bulls, 637, value £21,073; cows, 68, value £2,960. From Victoria: bulls, 14, value £2,300; cows, 9, value £900. As many of our readers are aware, pleuro-pneumonia has been prevalent in many parts of the colony during the year, particularly amongst travelling cattle, and the losses reported, in some instances, very heavy. Inoculation has been generally resorted to, and the belief in its efficacy is daily gaining ground. The practical proofs of its value in averting the disease have been many, and, in some instances, apparently unassailable. It will be remembered that, some two years ago, a special ear-mark was set apart as a distinguishing mark for inoculated cattle. This has been of the utmost value in determining the value of inoculation as a preventive of pleuro-pneumonia. In more than one instance, where the inoculation ear-mark has been adopted, a careful

look-out was kept, and it was found that the percentage of deaths amongst the inoculated as compared with the uninoculated cattle on the same run was most trifling. A number of gentlemen who have travelled with cattle within the two past years, having both inoculated and uninoculated cattle in the same mobs, have reported most strongly in favour of the practice, and it is worthy of remark that a large number of owners in the colony, who were for years opposed to inoculation, have, after having been induced to inoculate their own herds, recently reported to me their firm belief in its efficacy.

Many of those opposed to inoculation have suggested that returns should be called for from cattle owners in the colony as to their experience of it. This, however, was not acceeded to, as it had been twice done in New South Wales (a report on which we referred to two months ago), the evidence being in favour of inoculation.

Many of the reputed failures of inoculation in this colony have doubtless resulted from bad virus, or from the fact that it had not been resorted to until the disease had been for some time established in the herds.

Regarding the question of removing the prohibition on European stock, Mr. Gordon says, "As this question is now being agitated in New South Wales and Victoria, I deemed it wise to collect the feeling on the subject in this colony, and for that purpose addressed a circular to a number of owners of pure herds, as being the most likely to be most directly interested in the question. The replies are unequivocally in favour of the removal of the prohibition, but with the proviso that all imported cattle shall undergo isolation for a term at the port of arrival. In the case of sheep this would entail no additional restrictions beyond those already imposed by the Diseases in Sheep Act.

"Considering the length of voyage from Great Britain, the comparatively short term of incubation, or latent period of foot-and-mouth disease (from three to ten days), and that it ordinarily runs its course in from eight to fifteen days; and taking into consideration the stringent measures now in force in the United Kingdom to prevent its spread, I consider there would be little, if any risk, in admitting stock from Great Britain under the following restrictions:

"(1.) That the owners of the stock, or masters of vessels in which they are conveyed, produce at the port of arrival a certificate from a veterinary surgeon, selected or employed by the Agent-General, in London, to the effect that the stock were free from disease at the time of shipment.

"(2.) That the master of the vessel in which any stock

arrive, make a declaration that they have remained free from disease during the voyage.

"(3.) That all stock arriving be closely inspected (by a veterinary surgeon, if necessary) before being permitted to be landed, and submitted to at least one month's isolation in quarantine before being removed inland.

"(4.) That no fodder with which they had been in contact during the voyage be permitted to be landed, and that all fittings used for them on board ship be disinfected by or under the direction of an inspector prior to being landed.

"If these restrictions are stringently carried out, and I see no difficulty in doing so with our present staff of port inspectors, and the assistance of the officers of Customs, I cannot well imagine the possibility of introducing the disease, whilst there are only a few isolated cases of infection in Great Britain. Next to manure from diseased stables, there is no surer mode of preserving and conveying the contagion of rinderpest than by bales of hay with which diseased animals have been, even remotely, in contact, the necessity for totally prohibiting the landing of all fodder (as is done at present) from all vessels trading between Great Britain and the colony is very great."—*Live Stock Journal.*

PROFESSOR TYNDALL ON SPONTANEOUS GENERATION.

At a lecture recently delivered at the London Institution by Professor Tyndall on "Certain microscopic organisms, their genesis, and work in the world," the Professor sketched the course of the dispute on the question, and then described his own experiments, and stated the conclusions to which they had led him. He had filled a number of flasks with infusions of cucumbers, turnips, beef, and mutton, and hermetically sealed the tubes by drawing them out and closing them. He packed sixty of these flasks, and forwarded them to the Alps. Arrived there, he found six of the infusions muddy with bacterial life, and on examining the tubes he found them broken; the other tubes were intact, and the infusions were clear. In the case of the six flasks, was it not evident that the life found was due to the germinal matter that had entered with the influx of air? The next question was—Could air itself produce a generative energy in the flasks? Four of the flasks got broken, and of the fifty remaining he opened twenty-three in a hayloft by snapping the tubes at the end; he then carried the twenty-seven flasks 200 feet higher up the mountain, where he opened them in the face of a wind blowing over the higher crests, taking care

to destroy by heat any germs which might be on his pliers, and standing so that the wind did not blow from himself towards the flasks. All the flasks were thus exposed to the air. They were taken to his house in the Alps, and were hung over the kitchen stove; at the end of three days twenty-one out of the twenty-three flasks opened in the hayloft were crowded with infusorial life, while not one of the twenty-seven flasks opened in the mountain air showed signs of life. The latter set of flasks were still there, and he had no doubt they were as free from life as they were at the time of their departure from London; at all events, he saw them for three weeks, and they were without life. The conclusion was imperative that it was not the air, but something in the air, which must have produced the life observed, and that that something was fruitful particles or germs of life. If an infusion could be exposed to sterilised, moteless air it would never putrefy, nor would meat so heated ever putrefy. But many would say that air sterilised by heat was not sufficient for life. This objection he had met by means of an apparatus in which the air purified itself, the air having been admitted into a box with glass panels, the inside of the frame being rubbed with glycerine; the particles in the air fell by gravitation and stuck to the glycerine, and in time a condensed beam showed that the air was optically pure. Atmospheric air was still admitted to the apparatus through tubes which arrested all particles of matter. For more than a year, upwards of fifty infusions had been exposed to the air in this apparatus, and they were as sweet and transparent as at the time they were introduced; while similar infusions exposed to ordinary air were in two days swarming with bacterial life. There was no doubt or uncertainty regarding these results. He was determined to recognise nothing which was not tested over and over again with undeviating accuracy, and he had experimented in every possible way during the last two years with nearly ten thousand flasks. Professor Tyndall next showed two tubes, one containing a saline or mineral solution, having all materials necessary for the building up of bacteria, the other containing an infusion of turnip. He would, he said, infect these solutions with the point of the finest sewing-needle dipped into solutions alive with infusoria, and in twenty-four hours both solutions, which had been sterile for six months, showing no inherent spontaneous energy, would be filled with bacterial organisms. If they washed a little wisp of hay in a small quantity of water, so as to remove from the hay the almost impalpable dust with which it was covered, and then inoculated the two solutions with the

water, in three days the turnip infusion would be crowded with bacteria, but the mineral solution would be perfectly unaffected, even at the end of three weeks. It was as clear as day that the mineral infusion was capable of feeding the chick, but was not capable of hatching the egg. In the same way the floating matter in the air would produce bacteria in the turnip infusion, but not in the mineral solution. But a conclusion had been drawn in favour of spontaneous generation, that because the air produced no effect on the mineral solution, the turnip infusion did not get its bacteria from the air. The best literature of Germany was infected with this error. Such a conclusion was on the face of it logically unwarranted, and as a matter of fact was utterly unsound. Another erroneous inference, which was extending, was one drawn from the living bacteria, which were very sensitive to heat, and applied to the germinal matter of the air, which was hard and desiccated, and would germinate after eight hours' boiling. He overcame the resistance of the germs by killing them in the order of their resistance—that was to say, he heated an infusion from time to time as the germs developed, until there were no more germs left to grow. Then the infusion could be put on one side, and it was for ever afterwards barren. The lecture was listened to with close attention, and Professor Tyndall was frequently applauded.

IMPORTATION OF ANIMALS FROM CANADA.

Mr. Dyke, the Canadian Government agent at Liverpool, reports that the exports of live stock from Canadian ports to England during the year 1877 were as follows:—7412 cattle (including 65 pedigree Shorthorns), 6825 sheep, 373 pigs, and 298 horses, showing an increase over last year's importation of 4645 cattle and 4218 sheep.

Large numbers of Canadian cattle, sheep, and more especially horses, have been brought *viâ* New York, Boston, and other American ports, in consequence of other Canadian lines of steamers being unable to meet the demands of this rapidly-growing trade.—*Live Stock Journal.*

PROPOSED REGULATIONS FOR THE INTRODUCTION OF LIVE STOCK INTO AUSTRALIA.

We extract the following regulations, prepared by Mr. Alexander Bruce, chief inspector of stock for New South Wales, from the pages of our contemporary, the *Mark Lane Express.*

1. That importations be only allowed from countries in which there is little or no foot-and-mouth disease, and no rinderpest,

sheep-pox, nor any other infectious disease in stock not known in Australia.

This not only reduces the risk from foot-and-mouth disease to a minimum, but limits it to that ailment alone ; and that disease is frequently at such a low ebb in England as to admit of importations under these safe conditions.

2. That the seller of stock grant a certificate of soundness, which should be endorsed as correct by the district inspector.

This aims at the assurance that the stock are sound when they start for the seaport—a most important guarantee against their bringing the infection here.

3. That the stock are not conveyed to the port in ordinary cattle or sheep trucks, nor put into a stable by the way. This would also tend very materially to prevent the stock being infected in reaching the port of shipment.

4. That a duly qualified veterinary surgeon examine the stock, including those for the ship's use, prior to shipment.

In carrying out this duty the V. S. would see that the seller's certificate, endorsed by the district inspector, was produced, and otherwise satisfy himself that all the stock to be put on board the vessel was free from infection.

5. That stock are only carried by sailing vessels, and in limited numbers.

The object of this is to lengthen the probation, and diminish the risk there is on steamers through their making short passages, carrying more "ship's" stock, and calling at different ports.

6. That no forage or fittings which have been in contact with the stock, hides, or skins, are landed from vessels from places outside Australia.

The necessity for this precaution is obvious, and it is one which can be easily enforced.

7. That the captain and attendant on the stock make declarations as to their number and health, and that the captain daily record in his log the health of the stock.

Not only are these declarations very valuable, but they afford a good opportunity of obtaining full information in regard to the stock.

8. That the stock are examined by a V.S. and an inspector immediately on the arrival of the ship.

After a probation of a three (3) months' voyage such an examination as this would of itself, in ninety-nine cases out of every hundred, be sufficient precaution against the introduction of disease.

9. That the stock are washed and disinfected before leaving the ship.

This would completely remove any outward taint from the stock, and the quarantine would detect any inward.

10. That there be two thoroughly isolated quarantines, suspected and probationary.

If proper sites be selected, islands or peninsulas, there could

be no risk whatever of disease spreading from the quarantines, and they would make the matter a certainty.

11. That the stock, including the ship's stock, be conveyed from the vessel to quarantine by water. The object here is obvious.

12. That the stock should be placed and remain in quarantine for a period of not less than three months.

With such a period of probation, during which the stock would be constantly under the supervision of the inspector, and frequently under that of the chief inspector, it is utterly impossible for disease to exist and not be detected, supposing the stock had been incubating the disease when quarantined.

13. That on the expiry of the term of quarantine the stock be examined by a veterinary surgeon and the chief inspector, and, if sound, discharged.

This would be a mere formal inspection for the purpose of granting the necessary certificate.

14. That the stock, after leaving quarantine, be visited and inspected periodically for three months after they leave the quarantine.

Although it is not for a moment to be suspected that the stock would show any symptoms of disaese, this precaution, which is taken in regard to intercolonial sheep, should be so also in the case of these stock.

There are thus some fourteen different precautions which, in the event of importations being resumed, it is proposed to take to prevent the introduction of disease, and this almost any single one of them faithfully carried out would do, especially as the effect of the first precaution will practically be to remove all risk from rinderpest and sheep-pox, and, at times, also from foot-and-mouth disease, while the whole of the risk which can possibly occur will be that arising through the existence of a few isolated cases of that disease in the country from which the stock are intended to be shipped.

When again these precautions are considered as a whole, as in fact they would always operate, it must be evident that it is practically impossible for the infection to be brought to our shores, and utterly impossible for it to reach our stock; for before this could happen every one of these precautions would have to fail, and there are some of them, such as the probation on board ship and in the quarantine, which are self-acting, and therefore could never fail.

It might perhaps be said that the precautions I propose have been unnecessarily multiplied, and I believe that one half of them might be omitted with safety; but, although this is the case, I think the right course to take is not to throw a single chance away, and to take every precaution, especially as those I propose in addition to the quarantine would entail but comparatively little trouble or expense on the importers of the stock, while they on the other hand have all along declared that they are prepared to go any length in that direction, and to submit to

any restriction, in order to ensure that disease is not introduced with the stock.

From what I have said it will be gathered that I take an entirely opposite view of this matter from my friend Mr. Curr, and that I am of opinion, as I trust I have shown—

1st. That there is the greatest possible necessity for the renewal of importations; and, 2nd, that stock can, at times, under proper regulations, be imported from Great Britain, Canada, and the United States without the least risk of introducing the disease. ALEX. BRUCE, Chief Inspector of Stock.

Sydney, October 23, 1877.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 2ND, 1878.

Present:—The President in the chair; Professors Brown and Pritchard; Messrs. Balls, Batt, Blakeway, Cartwright, Collins, Roalfe-Cox, Dray, Fleming, Gowing, Greaves, Harpley, Hunt, Moon, Reynolds, Taylor, Withers, Woodger, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

The Secretary stated that letters had been received from Professor Williams, Professor Walley, Mr. Smith, and Mr. Broad, regretting their inability to attend the meeting.

A letter was also received from the hon. secretary of the Central Veterinary Medical Society, conveying the thanks of the society to the Council for the use of the Board Room, and asking for a continuance of the favour, which was granted.

A letter, dated October 3rd, was read from Mr. Joseph Woodger, in which he stated that the Secretary's reply to inquiries relative to certain persons assuming the title of M.R.C.V.S. appeared to have given great dissatisfaction. Mr. Woodger also submitted a draft letter in the form of a reply by the Secretary to inquiries, to be laid before the Council.

The Secretary stated that he had never heard any complaint as to the reply he had hitherto sent out in accordance with the bye-laws of the Supplemental Charter. The Register was published annually, and those who desired to have it could apply for a copy.

Letters had also been received from the United States from Messrs. J. B. Coleman and Mr. Edward Moore, members of the Royal College of Veterinary Surgeons, stating that a Mr. J. A. Going had been styling himself Professor and M.R.C.V.S.E., and

asking if that gentleman was what he represented himself to be. They were informed that a certificate would be sent on their enclosing the registration fee. One of the applicants had sent the fee and had obtained the certificate that Mr. Going was not a member of the Royal College of Veterinary Surgeons.

Another letter had been received from the United States, in which Mr. Nicholson, of the Detroit Fire and Marine Insurance Office, wished to be informed whether a W. D. Bunting had ever had any connection with the Royal College of Veterinary Surgeons. A similar reply had also been sent to him, requiring the necessary fee.

A letter has also been received from a Mr. Rynhart, styling himself V. S., Victoria, Australia, wishing to be informed whether Mr. Hutchings (whose advertisement was enclosed) was what he represented himself to be. The Secretary stated that Mr. Hutchings was a member of the Royal College of Veterinary Surgeons, whereas the writer of the letter did not appear to hold any kind of certificate whatever. He had not, therefore, replied at the letter.

The President and some of the members of the Council having expressed an opinion that any person had a right to ask for such information, the Secretary was instructed to write for the fee, on receipt of which the certificate would be forwarded.

A letter had been received from Mr. Nicholson, Librarian to the London Institution, Finsbury Circus, asking permission to make a few extracts from Lawrence's work on horses, published in 1810, for the purposes of an essay he intended to reprint. Mr. Nicholson called, and was allowed to make extracts, expressing his intention to present a copy of his book when completed to the Library of the College.

The Secretary stated that a member of the Library Committee had proposed that the following works should be purchased, viz.—'Horse-breaking,' by Mr. Morton; 'Horses and Riding,' by Mr. George Neville; and 'Horse Warranty,' by Mr. H. F. Lascelles.

The proposition was agreed to.

The Secretary stated that he had prepared catalogues of the College and Field Libraries, and asked the sanction of the Council for the printing of a certain number of copies.

On the motion of *Mr. Dray*, seconded by *Mr. Gowing*, it was agreed that 100 copies should be printed and sold (with the exception of a gratis copy to each member of Council), at a charge of sixpence, the price to be notified on the cover.

The Secretary announced that Mr. Fleming had presented to the Library of the College his complete work on 'Veterinary Obstetrics.'

On the motion of *Mr. Gowing,* seconded by *Mr. Batt,* a vote of thanks was proposed to Mr. Fleming for his presentation.

The Secretary submitted the forms for the second examination, to be held in April next. The Council approved of the same, and ordered them to be printed. Assent was also given to the insertion of the words "Examination and Examiners," to be engraved on the plate for the Fellowship Degree, which had been omitted in the diploma; 200 copies of the ordinary diploma were ordered to be printed.

Report of Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £127 12s. 3d., which the committee recommended should be discharged.

Mr. Harpley, as Chairman of the Finance Committee, explained that the discrepancy of ten guineas, which had appeared in the last quarterly accounts, had arisen from the omission of that sum, which had been received as a fee for a fellowship degree. There was another slight discrepancy of £1, which had been discovered; but it was thought advisable not to sign the balance-sheet until this explanation had been made to the Council.

After this explanation the report was received and adopted, and the necessary cheques were ordered to be drawn for the current expenses, and also for examiners' fees.

College Fund.

The Treasurer stated that there was at present no sum standing to the credit of the fund at the banker's. All the money is invested.

In reply to a question,

The Secretary said that the amount standing in Consols was £1390 17s. 1d., which, with £122 16s. 3d. purchased in October last, made a total of £1513 13s. 4d.

The obituary notice was read.

The examinations in London were fixed to take place on the 7th of January, and those in Scotland on the 21st.

Royal Agricultural Society's Prizes.

The Secretary stated that a letter had been received from Mr. Jenkins, the Secretary of the Royal Agricultural Society, wishing to be informed what steps had been taken to invite eligible candidates for the Royal Agricultural Society's prizes. He (the Secretary) had placed himself in communication with the relative candidates (of whom there were seven) who were desirous to compete for the society's prizes. At the suggestion of the

President he had also written to the three examiners who officiated last year, all of whom agreed to act on the present occasion.

After some conversation as to the amount of fees to be awarded to the examiners, it was ultimately moved by the *President*, seconded by *Mr. Greaves*, and resolved, that the sum of £21 be voted. The examination was fixed to take place on Wednesday, the 9th January, at 10 a.m.

Messrs. Hunt, Gresswell, and Mayer were reappointed examiners, and in the event of either of these gentlemen declining to accept the office the President was empowered to appoint another in his stead.

Fellowship Degree.

The Secretary announced that there were seven candidates for the Fellowship Degree, three of whom had sent in their certificates with a fee of five guineas each.

It was arranged that the day for the examination should be fixed by the examiners and the Secretary.

A letter was read from Professor Walley, in which he stated that, being unable to attend the meeting, he could not take part in the discussion on the President's motion for the suspension of Bye-laws 32 and 33; but he trusted the President and Council would see the advisability of limiting the proposed test to the subjects of the last examination of those who had been in practice longer than three years, and to the subjects of the two last examinations of those who had been in practice for a period, say, of two or three years, as he was convinced that if the motion were passed in its present form it would be nearly, if not quite, valueless. Few practitioners of older standing than three years would care to recommence the study of chemistry, anatomy, and physiology, and to study a new subject, such as botany.

A letter had also been received from Mr. Murray, Brighouse, Yorkshire, who obtained the Highland and Agricultural Society's certificate in April, 1876, and wishing to be informed whether he may be allowed to present himself for examination at Christmas.

Mr. Dray again called attention to the Secretary's salary; but

The President reminded him that the matter had been fully discussed at a previous meeting, and that it was undesirable to rediscuss it then. The subject had been arranged to come up for further consideration at the end of the financial year.

Mr. Dray then gave notice that he would call attention to the subject at that time.

The President moved the suspension of Bye-laws 32 and 33 for a period of three years, in order to enable gentlemen who have held the certificate of the Highland and Agricultural Society three years to obtain the diploma of the Royal College of Veterinary Surgeons, by passing the second and third examinations at one and the same time, on payment of full fees; and in order to enable gentlemen who have obtained the certificate more recently, but prior to December 31st, 1877, to obtain the diploma of the Royal College of Veterinary Surgeons by passing all three examinations at one and the same time, on payment of full fees. The object of the motion, he said, was to relieve certain gentlemen who, in time gone by, had obtained the certificate of the Highland and Agricultural Society, from the disability under which they had been placed by not having attained the proper and legal diploma. Of course it might be said that it was the fault of those gentlemen that they had not at the proper time obtained the legal qualification; but it should be borne in mind that in Edinburgh strong influence was brought to bear, by the professors and others, to induce them to take out the certificate of the Highland and Agricultural Society, and at that period there was an idea that that society might become the licensing body for Scotland. It seemed to him to be a hard thing to place a life-long penalty on men for an act of indiscretion in their earlier days. It was a hard case that a man who had studied at a regular veterinary school, and who had gone into the profession, should be liable ever after to be branded as a quack or an improperly qualified man. The object of his motion was to remove this grievance and hardship. Some years ago, soon after the Charter was first obtained, the Council admitted all gentlemen holding the certificate of the Highland and Agricultural Society on passing a *pro forma* examination, and, no doubt, under that license a number of unqualified men passed into the profession. The present motion, however, was simply to remove the grievance which men who had studied the regular time now felt at not being able to get examined at one and the same time. It would not lower the standard of education or the standard of men in the profession in the least degree. When a gentleman had once got into practice he could not come up to London to be examined three times. All he asked them to do was, not to suspend in his favour the examinations, but the particular clauses which required him to be examined at three separate periods. He had been written to on one or two occasions by gentlemen practising in manufacturing towns, who complained of the disqualification under which they laboured from not having the proper and legal diploma. He thought this was a right feeling, and one which, as far as they could, the Council

ought to encourage, and he therefore begged to move the suspension of the bye-laws referred to.

Professor Brown said, that when the President first gave notice of his motion he (Professor Brown) had some misgivings as to the effect of the suspension of the bye-laws as suggested, because on a former occasion he recollected that it was felt over and over again that a difficulty had arisen and most of the members on the Council were only too glad to accept a motion to return to the former state of things and to deprive the holders of the certificate of the privilege which they had up to that time enjoyed; but thinking the matter over he had come to the conclusion that, under the present circumstances, to suspend the bye-laws was the very wisest thing that the Council could do. Putting on the one side what the President had said as to the justice or injustice of keeping men out of the profession after they studied at College, there was a great deal to be said in favour of the proposition on the ground that it would remove one very great objection commonly urged by the Scotch authorities against what they looked upon as the localization of the licensing body in London. There was no doubt a widespread conviction in the public mind in Scotland and elsewhere that the Royal College of Veterinary Surgeons was a London College, and the applications made for special charters had been chiefly based on that ground—that there was nothing at present existing but the London College, and that the other parts of the kingdom laboured under a disability on that account. There was another thing on his mind which he could not at present explain quite fully; but when the New Contagious Diseases (Animals) Bill came before the House, the Council would probably see what his object was. But it would be a very great advantage, as far he could at present see, if it could be urged that the holders of the Highland and Agricultural Society's certificates could become members of the College if they choose, providing there was no want of knowledge and no disinclination to pay the fees. On that ground alone he should support the motion, and all the more readily because he took it in connection with what the President intended to propose at the end of the meeting, namely, the holding of the next annual meeting in Edinburgh. This, in connection with opening the door to the holders of the Highland Society's certificates on moderate terms, would go far to remove the objections urged against the localization of the College in London. He readily gave his adherence to both the proposals.

Mr. Gowing said that some time ago the bye-laws were suspended for three years for the purpose of admitting into the body corporate those who held the Highland Agricultural Society's

certificate. Ample time was then given for such to avail themselves of the opportunity given them, and if they had neglected to do so he did not see why the Council should open the door a second time. Such a course, he thought, would be an injustice to the students who had gone to the Agricultural College and the other schools for their teaching. It might be said that the education and knowledge at that particular period was insufficient, and that now the teaching was of a higher standard. Probably this was the case, but there was no guarantee that it was so.

Mr. Roalfe-Cox said that, considering the interest the President had taken in all matters relating to the profession, he opposed the motion with extreme reluctance; but the matter was a serious one, and he thought the greater body of the profession, those engaged in private practice, as veterinary surgeons were, in this particular instance, entitled to some degree of consideration, be-because they must know better than any the individual character of the several persons practising in their particular districts. Considering the time and trouble expended on the bye-laws it was, to his mind, extremely undesirable that they should be suspended. He felt he was only the exponent of the general feeling of the profession when he predicted that the motion would not be carried; but if it were carried a question would arise of great importance to those practising under the diploma of the Royal College of Veterinary Surgeons. In a large community like theirs it was too much to hope that all its members should turn out to be of the representative class which could be desired, but all had entered the profession by the legitimate portal; it would, however, be an injustice to introduce amongst them any who might be practising in such a way as could only tend to bring discredit, and would be a great disadvantage to their confrères. If the motion should be carried he thought that another step should be taken, either as a rider to it or as another motion to be passed contemporary with it, to the effect that no individual holding the certificate of the Highland and Agricultural Society should be admitted as a candidate for examination until his name had been placed prominently before the members of the profession practising in the same district. He would propose that the radius should be fixed at a mile for London, and that in provincial towns it should be from ten to twenty miles, and the veterinary surgeons in these districts would be in a position free from all bias to give their opinion as to whether or not the candidate was one who would cast discredit upon the profession. Some guarantee of the moral character and professional bearing of a man was requisite before he should be admitted by an irregular opening.

Mr. Blakeway asked how long a student must study before he could pass the Highland and Agricultural Society.

The President said that the terms were the same as the old terms of the Royal College of Veterinary Surgeons. Whether they had instituted a third examination he could not say; but he was in a position to state from enquiries he made at Edinburgh a year ago that they had not.

Mr. Blakeway said the reason he asked the question was because the motion would lead some to suppose that an injustice would be done to the students, because no student under the rules could pass his first examination until he had studied three terms at the College, nor his second examination until he had attended two other terms.

Mr. Greaves asked whether it was the President's intention that the recently passed students at Edinburgh of the Highland and Agricultural Society should come in at the door which it was proposed to open. He thought that a date should be fixed, such, for instance, that the students must have been in possession of the Highland and Agricultural Society's diploma for at least three years. He was entirely in favour of the motion, and was delighted to listen to the remarks Professor Brown had made. On former occasions the opening of the door was approved of by the whole profession because it was thought that it would tend to produce unanimity. Those who possessed the diploma of the Highland and Agricultural Society had undergone the same course of instruction as those who possessed the diploma of the Royal College of Veterinary Surgeons. Some of the best men in the profession had been taught at the Edinburgh College and had not got the diploma of the Royal College of Veterinary Surgeons, and he thought that on this occasion the Council were acting upon a right principle if they should agree to the motion of the President.

Mr. Batt opposed the motion with great regret, because he was perfectly convinced that any scheme advocated by the President was, in his view, for the benefit of the profession. He could not help thinking that it would be a step in the wrong direction. He had been in communication with a great number of gentlemen outside the pale of the Council—men who had their profession thoroughly at heart; and, without exception, they were entirely against the motion. He condemned the vacillating policy of making laws one year and undoing them the next. Within the last two or three years rapid strides had been made in the profession by those who entered the Colleges; and to keep faith with the younger members of the profession he did not think that the Council should open the back door to those who

held certificates other than those of the Royal College of Veterinary Surgeons.

Mr. P. Taylor asked if the motion would have any effect upon the Highland and Agricultural Society as a body in foregoing their diploma. What was wanted at the present day was one Examination Board, and one diploma, and one united national corporate body. He could not see why the Royal College of Veterinary Surgeons should be so liberal as to keep throwing its door open. If those who held the Highland and Agricultural Society's certificates had the acumen and the knowledge that Mr. Greaves represented, they would think it a pleasure to come forward and be examined before the Royal College of Veterinary Surgeons. He thought the Council should make a stand-point at some period, and not admit them, because he was quite certain that an injustice would be done to the present students. He thought the matter should be more thoroughly discussed before the bye-laws were suspended, and that the Council should apply to the Highland and Agricultural Society to ascertain whether they would forego their examination. Then the door should be opened, and those who desired to come in at a particular time could do so, and could be examined for the following three years.

Mr. Harpley thought the discussion had been a most useful one; but there seemed to be a doubt as to how far the motion of the President proposed to carry those gentlemen who held the certificate of proficiency from the Highland and Agricultural Society. Mr. Blakeway had raised the very important question of whether those who had passed last Christmas would come up at once for the diploma of the College; and it seemed to him doubtful, from the wording of the resolution, whether they could or not. He thought it would be advisable to postpone the subject to another meeting. He begged to move—"That the matter be referred back to the Council to the next meeting for further discussion, and that in the mean time the President be requested to obtain the advice of Mr. Loch as to the reading of the clause."

Mr. Taylor seconded the motion.

Mr. Fleming called attention to the fact that if at any future time, as had several times lately been suggested, the Council should apply to Parliament for an Act for protection from persons who had no claim to the title it conferred, the Highland and Agricultural Society would oppose their application by every plea they could successfully work upon. There could not, in his opinion, be any harm in throwing open a back door, because the Council would only be admitting men after an examination similar to that which they now required. The only exemption

made would be with regard to the period of study. By opening the door as proposed the Council would at once cut away a large portion of the ground of opposition from the feet of the society, should they apply for an Act such as he had referred to. He thought the Council and the profession should bear this in mind by the next meeting, because it was important. Many of those who held the Highland and Agricultural Society's certificate he knew to be worthy and excellent men and highly qualified practitioners, and if they submitted to the examination he thought there would be every cause to feel that they were well qualified to be members of the body corporate.

Mr. Taylor remarked that members of Parliament would protect the unfortunates as well as the successful when the application for the Act was made, so that there would only be a few that would pass the standard.

Professor Pritchard called attention to the fact that whatever Act might be obtained would be of a prospective and not of a retrospective character, and the members of the Highland and Agricultural Society who had been practising as veterinary surgeons would not be interfered with.

Mr. Hunt thought that Mr. Fleming took quite a *couleur de rose* view of the character of those who represented the Highland and Agricultural Society; because there were others who hardly deserved so high an encomium; but of course if they were tested by examinations, some men who were not of the highest character and respectability would be weeded out. The door had already been thrown open for a long time, and all the older members of the profession who had not availed themselves of it ought now to be shut out. The younger members of the profession had had every inducement to join their ranks. He admitted the value of having as many members on their side as possible, especially if there was another effort to be made to obtain a protective Act, which he had very little faith in. Individual virtue was the best protection against empirics and pretenders. He should like to support the proposition if he thought it would do any good; but something else must happen to convince him that it was a politic action.

Mr. Fleming said that Mr. Hunt rather misapprehended him in regard to the holders of the certificate. What he said was that he knew some of the holders of the certificate to be good men; but, unfortunately, on both sides of the question there were bad men.

Mr. Blakeway asked if anything had been done in reference to the resolution passed at the Liverpool meeting asking the Highland and Agricultural Society to forego their diplomas.

The President said he had no hesitation in assenting to the

motion for the postponement of the debate, because it was a question which required much consideration and much ventilation. It was all the more necessary to postpone it because a legal question had been started, of which he did not at present see the solution. He would take care to have such a form drawn out as would admit those only whom it was intended to admit. Some remarks had been made as to admitting by "a back door," all of which were rather beyond the question. It was not proposed to admit any one unless he was as well qualified as those who were admitted in the present day. He did not see, in answer to an objection made in the course of the debate, why the character of some men who practised as veterinary surgeons should be bad. Why should a man who was practising as a veterinary surgeon be worse than the student who had not practised? He did not wish to complicate this matter with the Highland and Agricultural Society. He brought it forward as a matter of justice to those who, in their younger days, had been advised to take an improper qualification, but who now wished, after due examination, to take out a proper one. It should be the object of the Council to limit the number of those practising without any proper qualification, and to draw them all into the body corporate, whose motto was, "Union is strength." He had great pleasure in accepting the motion for the postponement of the question.

The motion was then agreed to.

Proposed Annual Meeting in Edinburgh.

The President moved, "That the next annual general meeting be held in Edinburgh." He felt, he said, considerable anxiety in regard to this matter, because he was aware that several gentlemen with whom he usually acted were opposed to it. He was anxious about the carrying of the motion, because he felt that the best interests of the profession were largely concerned in its success. The Royal College of Veterinary Surgeons was a national and imperial body, appointed by the Crown to control the affairs of the whole of the veterinary profession and to conduct all the examinations throughout the United Kingdom. There was no doubt, however, a general impression on the part of the outside world that it was a local London college, that it was connected with the London school, and was very largely under its control. If this idea were confined simply to what were usually called ill-informed persons he should not take so much notice of it, but it was widely spread, and pervaded even the highest classes of society. This was an evil which it was in the power of the Council to correct. The way to do this was to hold the annual general meeting, this year at least, and

occasionally in succeeding years, in the Scottish metropolis, under the power granted by the Crown last year. Another reason he had for wishing to go to Scotland was that a great many members of the profession had been bred in the Scottish schools. Any disloyalty—if he might use that word—which had been shown by the Scottish schools to the Royal College of Veterinary Surgeons some years ago had now passed away; and he thought it would be a graceful and a beneficial act if, the first year when they had the power, they were to hold their first annual general meeting under the new Charter in the Scottish metropolis. He therefore begged to move that the place of meeting be fixed, under the new Charter, for the next annual general meeting at Edinburgh.

Mr. Hunt seconded the motion.

Some doubts having been expressed as to whether the Charter allowed the meeting to be held this year or three years hence at Edinburgh, it was ultimately resolved that if the law officer of corporation thought that the next meeting could be held at Edinburgh this year the Council would be glad to do so.

On the motion of *Mr. Dray*, seconded by *Mr. Cartwright*, Mr. George Williams, of Pimlico, was elected a member of Council, in the room of Mr. Talbott, resigned.

This concluded the business of the quarterly meeting.

A Special Meeting

was afterwards held for the consideration of Bye-law 50.

The President moved that after the words "veterinary surgeon" the following words be inserted:—"or gentlemen who have passed the Civil Service or Army examination held by the Civil Service Commissioners."

After a few words by *Mr. Reynolds* in opposition to the motion and an explanation by the *President*, the motion was agreed to.

The Council then adjourned.

ROYAL COLLEGE OF VETERINARY SURGEONS —FELLOWSHIP DEGREE.

A Special Meeting of the Court of Examiners, appointed by the Council of the Royal College of Veterinary Surgeons for the Examination of Candidates for the Degree of Fellow, was held in accordance with the provisions of the Supplementary Charter, on January 12th, 1878.

The following Candidates, having undergone the necessary written and oral Examinations, obtained their Diplomas, and were admitted Fellows of the Royal College:

Mr. Arthur Henry Santy . .	Norwich.
— William Duguid . . .	"Brown Institution."
— Robert Ward	Woking, Surrey.
— John Woodroffe Hill . .	Wolverhampton.
— Harry Olver	Tamworth.
— Joseph Mackinder . . .	Peterborough.
— Chas. Edward Challinor . .	Pendlebury, Manchester.

EXAMINATION FOR FELLOWSHIP OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Physiology.

1. Describe the mode of growth or development of long bones. Contrast the microscopic appearances of a transverse with a longitudinal section of bone.

2. Describe the process of rumination. What are the conditions favorable for good digestion? What are the functions of the bile, the pancreatic juice, and the secretion of the intestines in regard to digestion?

3. What is the present state of our knowledge with respect to the innervation of the heart? Mention particularly what is understood by the terms inhibitory action and vaso motor power?

4. What are believed to be the respective functions of the ganglia of the brain?

Comparative Anatomy.

1. What is the form of the red blood discs in the Horse, Camel, Hen, and Frog?

2. What are the ganglia and where are they found? How does a nerve comport itself on entering a ganglion?

3. What are the anatomical differences in the circulatory organs of a vertebrated, and an invertebrated animal?

4. What are the sympathetic ganglia annexed to the fifth pair of cranial nerves? Describe their situation and connection with this nerve.

Pathology.

1. Describe follicular scabies in the Dog, and give the leading characters of the parasite producing it.

2. What is Cataract? Where is it situated, and how produced?

3. Describe the lesions of Glanders, and the organs and textures in which they are observed.

Therapeutics.

1. Define the action of Diuretics.

2. What is Aconite? What are its physiological and therapeutical properties?

3. Describe the medicinal properties of Cantharides.

Surgery.

1. What are the causes of and changes which occur in the textures in the process termed 'Atrophy' and the Degenerations?

2. What is the difference in the gait observed in the following sources of lameness: 1 splint, 2 ringbone, 3 navicular disease, 4 sidebones, 5 laminitis, and 6 shoulder lameness, particularly that arising from sprain, or disease of the Flexor Brachii (coraco radialis) muscle?

3. Describe the various methods adopted to arrest arterial Hæmorrhage, and the modus operandi of each, and the methods by which divided arteries become permanently impervious.

Dietetics.

1. What are the proportions of albuminous hydro-carbonaceous and saline ingredients, contained in wheat, oats, barley, linseed, rape, and cotton cakes, turnips, carrots, potatoes, hay, and straw? Also state in what manner these several articles of food may be most economically used, and what is the nutritive value of each?

2. Describe the changes which must occur in starch and gluten before they become assimilated.

3. Give the proper dieting in the following diseases, viz.: Diabetes, Oxyluria, Jaundice, non-parasitic skin diseases, and for the Mare and Cow before and immediately after parturition.

Sanitary Science.

1. State the composition of the atmosphere, and mention the change it undergoes in respiration.

2. What amount of cubic space in a stable should be allowed a medium-sized horse, and what are the effects of over-crowding and insufficient cubic space?

3. What are the differences between hard and soft water, and what amount of saline residue constitutes the latter?

Epizootology.

1. What are the causes which tend to the maintenance of Variola Ovina in those continental countries in which it prevails in a continuous manner, and what are the sanitary police measures necessary for the suppression of this malady?

2. How are Glanders and Farcy maintained and extended?

3. Mention some countries in which Rabies Canina has not yet appeared.

CENTRAL VETERINARY MEDICAL SOCIETY.

At a meeting of the above society held at 10, Red Lion Square, W.C., on Thursday, December 6th, at 7 p.m., the president, J. W. Axe, Esq., in the chair,

Mr. Thomas Moore, in exhibiting the heart, lungs, and larynx of a rabid dog, said the dog had been on the tramp for three days before being shot. There were all the usual *post-mortem* appearances of the affection here, the lungs showed inflammatory spots, and the right ventricle of the heart had several ulcerations externally.

The Secretary said he was constantly having inquiries made of him about rabies and hydrophobia, the supposed greater prevalence of which he was rather disposed to doubt, and in answer to the president said he could not help thinking that the public journals had largely exaggerated the question, and the prevailing panic was the result.

Mr. J. Woodger, jun. affirmed that he differed with the secretary, having had recently a number of cases brought to his notice.

Mr. J. Moore, sen., said he had no doubt rabies was prevailing to a large extent, having only a few days ago had two cases, and just prior to that two others at one place. He quite admitted great mistakes were made, and many animals suffering from fits were regarded as rabid. In some instances the symptoms were so obscure that one could not define the nature of the disease: on the part of the public, therefore, errors of judgment prevailed to a great extent.

The Secretary remarked that a dog having been ill two days was recently submitted to him showing signs of sore throat; he examined the throat on the evening of the second day, and inserting his finger in search of any foreign matter, the presence of which was suggested by his manner of shaking the head, the dog instantly vomited. Being summoned early the following day, he noticed the expressive howl as he approached the room where the dog was kept, and found the lower jaw paralysed, convulsions present, powerless but repeated efforts to drink, only being able to work the water or milk into spume; there was no tendency to bite, he knew the dog well, and could gain no trace of the source of infection, or yet bring the owner to believe in the nature of the disease, preferring rather to believe it as the result of a fall between the platform and carriage of a railway some weeks before; he remembered that occurrence, but it had not appeared to affect him. Another veterinary surgeon who saw the dog confirmed the secretary's opinion.

Mr. J. Moore, sen., would like to give expression to the view that a dog might be so far affected with the disease as to communicate it to another animal and yet recover himself, following the well-known examples of other contagious diseases. To bear out his view, he mentioned one recently occurring near Maidstone, where a death from hydrophobia is recorded, but the dog that bit the person continued well.

The President observed that within the past two years, over twenty cases of well-defined madness had been brought under his notice, and he might also add that during the previous ten he

did not suppose he saw half that number. If his observations were correct there could be no doubt as to the very great prevalence of rabies during the first-named period, and that it was more prevalent now than at any other time within his recollection. In the village in which he lived he had no less than four cases within the last seven months.

Mr. Moore, sen., said a short time ago he went to Nottinghamshire to see a pack of hounds, all the young ones of which had to be destroyed in consequence of rabies communicated by a stray dog to one of the pack. He remembered two pregnant mares that died of rabies where the same appearances were found in the fœtuses as in the mares. One of the mares lying down put out the foot like a dog, and was more irritable on one side than the other.

The Secretary referred to a case he witnessed some years before, where the horse bit his fore limbs from the knees downwards, butted the wall like a stag, abrading the skin by the actions, and roared perpetually; the saliva streaming from the mouth.

The Secretary produced the larynx of a cow, with portions of the trachea, which was a perfect specimen of tubercular ulcers; the Society was indebted to Professor Walley, of Edinburgh, who had forwarded it for inspection. The subject was a cow, seven years old, that had been sent for slaughter. She had an unthrifty appearance, laryngeal cough, and slight roaring; pulse 80, respiration normal, temp. 103° F., muzzle dry, skin icteric, &c. The *post-mortem* showed tubercular disease of the right lung and liver. In each case the mucous layer showed extensive and very characteristic lesions in which the transverse tracheal muscle was involved. The professor also mentioned a tubercular disease in a heifer where large depositions of fat existed in the interstices of the tubercular masses of lung, the right being a mass of obsolete tubercle weighing between sixty and seventy pounds.

The President then observed, "Some time ago, in discussing the question of pig typhoid, I ventured to remark that with certain facts before us it is difficult to overcome the idea that ere long the study of comparative pathology will be the means of elucidating some of those vital points in the diseases of man which have hitherto remained obscure. That view I am happy to know is gaining ground, and science is indebted to our colleague, Mr. George Fleming, for directing public attention to the serious neglect with which the subject has been treated. I propose to ask your attention to the consideration of the structural changes of the vascular tissue identical with those found so commonly in Bright's disease of the kidney, the etiology of which cannot be considered in regard to the lower animals on account of a complete absence of clinical facts. In the human subject it is applied as a generic term, embracing a variety of

structural changes of that organ, both acute and chronic, and is commonly identified with albuminous urine, frequently with a dropsical state of the body and various acute and chronic complications, and among the latter hypertrophy of the left ventricle of the heart is very common. Although various authors antecedent to Dr. Bright directed attention to the existence of dropsy and albuminous urine with disease of the kidneys, it is to his researches we owe our present knowledge of the various changes the kidneys undergo, and much that is known of the remote effects that complicate it. More recently, others have added fresh important truths to this branch of renal pathology. In 1850, Dr. G. Johnson, at the Medical and Chirurgical Society, read a paper in which he pointed out for the first time that in the chronic affection the small renal arteries became hypertrophied in their muscular layer, ascribing it to continued exalted contraction engaged in propelling the blood through obstructed capillaries. When, however, the researches of Bernard and Brown-Séquard made it appear that the vaso-motorial function is to regulate the blood supply to the requirements of the various tissues, Dr. Johnson recognised an error in the view he had propounded, and in a second paper, read in 1867, corrected his statement and likewise made it known that the thickened state of the arteries is not confined to the kidney, but prevails more or less in all the small arteries of the body. He concluded from this that the muscular hypertrophy was induced by blood contamination, and the cardiac hypertrophy was secondary, consequent on exalted arterial function; this assumed the impaired condition was due to a general reflex condition of the arterioles, and to overcome the resistance on the blood flow the physiological action of the heart is increased and hence the hypertrophy; but it is more especially in reference to the change the arteries undergo that he wished to draw attention, as on that pathologists were not agreed. In 1872 Sir W. Gull and Dr. Sutton, at the Medical and Chirurgical Society, confirm the observations of Dr. Johnson in great part, but they question almost to a denial the existence of an hypertrophy of the arterial sheath. Dr. Dickinson, however, speaks with great impartiality confidently of hypertrophy of the muscular layer and tunica adventitia; this was certainly the condition of the specimen he exhibited. Whatever might be the condition of these changes it was pretty well agreed that in man its cause was blood contamination. But whether the urinary excreta were alone concerned was doubtful. He hoped soon to be able to supply some clinical and pathological data in reference to the malady. He next called attention to some portions of muscle that had been forwarded by Mr. Jackson, M.R.C.V.S., of Sheffield, who, in his official capacity of inspector of meat, observed some exhibiting a peculiar abnormal appearance, the sectional surface being traversed by a number of coarse white branching lines intercepting the larger bundles of muscular fibres; smaller ones are visible separating

lesser fasciculi, also round white spots passing from the outer fascicular septa; these are firm and capable of being drawn out by forceps, appearing then as round bands, and if cut transversely show a minute aperture. When the flesh was first received at the Veterinary College it appeared of a bright red colour to the unaided eye and perfectly healthy in other respects; having microscopically examined the specimens, he submitted the slides, that the lesions might be seen, and also one of normal (ox) muscles for comparison. Some of the arterioles exhibit a decided thickening; where more advanced, the vessels were cloudy and obscure, and in some instances altogether degenerated. As the disease advances it would appear that the muscles resolved into a fibro-granular condition. There was also a swollen and more or less translucent condition of the fibroid growth, and the development is also noticed in the contiguous interfascicular septa. The thickened walls of the vessels and hypertrophied connective substance of the muscle are in parts infiltrated with small round cells, and scattered through the latter are various sized groups of hæmatin-granules. In many instances the lumen of the vessel is reduced to a mere chink or completely obliterated by the contracted nerve material.

Mr. Moore, sen., asked if the vessels were hypertrophied before the kidneys were otherwise diseased.

Mr. Howard said in Bright's disease albuminuria prevailed to a large extent, which kept the body in a state of emaciation, and eventually caused death by inanition. The disease of the capillary arteries described was quite new to him. It was a received and fixed doctrine among surgeons that the farther you go away from the centre of the circulation the less likely are you to meet with diseased changes in the arteries, those near the heart being the most affected. In albuminuria blood is probably raised in density, and if so the hypertrophied condition of the heart may be explained by the increased propelling power to which it would excite the organ.

Mr. Burrell said he took it that in renal disease attended with structural change, as in most others, there was first functional disorder; and if they admitted this the case here, the retention of secreta within the blood which should have been thrown off, then they admitted the cause of irritation to the vaso-motor nerves and the cause also of contraction of the muscular coat of the arteries. He believed there were instances of Bright's disease where the kidney was enlarged and not contracted, and it would be interesting to find whether there were fibroid changes of the vessels in the two examples.

Tubercular meningitis.

The President said he had received from Mr. Blakeway, M.R.C.V.S., of Stourbridge, the head, portion of the lungs and liver of a cow. The clinical notes were brief. The patient was

a well-bred shorthorn beast, his property. In the spring of the present year she gave birth to a calf which she reared; at this time appeared to have good health, gave a fair quantity of milk during the summer, but was noticed to separate herself occasionally from the herd. Later on a profuse discharge issued from the near eye, and vision became somewhat defective. The appetite, however, was not impaired, and the breathing and pulse said to have been but slightly disturbed. Inthis state she continued for a short time till cerebral symptoms appeared, ultimately became paralysed and comatose, and she was destroyed. The brain which he produced he had removed, and would relate its condition. The superficial vessels were largely charged with blood, especially the arteries, which gave it a bright red appearance. The pia mater of the base, as was well apparent, was lost in a thick mass of confluent tubercles, extending from the medulla oblongata to the fissure of pylorus, and in a lateral direction to the sides of the hemispheres. In the latter situation a small quantity of gelatinous lymph occupied some of the sulci, and high up on the frontal lobes miliary tubercles could be distinguished here and there in the line of arteries connected with the pia mater. The cineritious structure was pasty and, like the entire organ, exhibited a decidedly œdematous condition; the lateral ventricles contained no fluid, nor did the size and condition of the cavities indicate its having existed. The septum lucidum was intact, the foramen of Munro was of normal dimensions, the ventricular lining smooth and bright. The absence of fluid in cases of this description is a rare exception to a very general rule. If we examine the specimen he had under the microscope we should find the miliary tubercles planted on the arteries, where they appear as minute circumscribed and more or less rounded projections. Under a higher power they are seen to be contained in the perivascular sheath and composed of lymphoid corpuscles; the tubercle elements extend far beyond the aggregate group, appearing as scattered cells in the sheath of the vessel. The portions of lung and liver exhibit very extensive lesions, the former studded with confluent granulations and softening masses, the latter largely excavated and disintegrated tubercle. His brother, Mr. Joseph Axe, of Doncaster, forwarded him a horse's brain exhibiting extensive tubercular disease, the pia mater being largely invaded with a sulphry looking layer of confluent granulations. Both ventricles largely distended with fluid and the right frontal lobe contained a superficial cavity filled with disintegrated tubercle and several other small caseous masses scattered about. Tubercle in the brain of the horse, so far as his experience went, was rare.

In reply to Mr. Moore, he believed the disease of the kidney to be simply a local manifestation of a general disease of the vessels.

In reply to Mr. Howard, he did not believe the amount of fibrous tissue contained in a muscle would affect the constitution

of the arterioles; in the specimens before him the altered structure of the vessels could not, he thought, be accounted for in any other way than by regarding it as the outcome of a diseased process. In reference to the arteries generally, it was true that the large ones were more commonly the subject of disease, but in such cases they had to deal with inflammatory affections, which did not appear to be the case here. Mr. Howard's query as to hypertrophy existing in the large white kidney, he believed it did; it was recognised as a certain state of Bright's disease, which usually results in the contracted form.

Mr. H. G. Hancock, of East India Road, was elected a Fellow, and Professor Pritchard proposed, and will be duly balloted for.

The meeting then adjourned. Present: 12 Fellows and 4 visitors.

JOHN ROWE, jun., *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above society was held at the Blackfriars Hotel, Manchester, on 19th December, 1877. Mr. Tedbar Hopkins, President, in the chair. The following gentlemen were present:—Messrs. Peter Taylor, Thos. Greaves, Tom Taylor, Samuel Locke, W. A. Taylor, John Lawson, E. T. Faulkner, of Manchester; Charles Elam, George Morgan, T. Leather and J. W. Moore, of Liverpool; W. Cartwright, Whitchurch; Joseph Howel and Faulkner, Rochdale; J. Marshall, Knutsford; A. Prescott, Pendleton; A. Darwell, Northwick; H. Bean, Macclesfield; J. Bunnell, Oldham; W. Woods, Wigan; Polding, Bury; A. Brooks, Pilkington, and the Secretary. Letters of excuse were read from Professors Williams and Pritchard, Messrs. M. E. Naylor, G. Heyes, R. S. Reynolds, and Jos. Hart.

Mr. P. Taylor proposed for election Mr. E. T. Faulkner, of Rochdale, seconded by *Mr. Faulkner*, of Manchester, carried unanimously.

Mr. Bean, of Macclesfield, then exhibited a morbid specimen, consisting of the bones of a malformed fœtus, in which a portion of the spinal column was wanting, and the limbs distorted in an extraordinary manner Mr. Bean described the position of the fœtus in utero, and the difficulty he had in extracting it.

Mr. Dacre placed upon the table specimens of colloid tumours taken from the abdominal cavity of an aged mare; the mass of tumours (a portion of which only was exhibited) weighed about thirty pounds, and varied in size from a walnut to a cricket ball. They were globular in form, and consisted of an external membrane of dense structure, containing a gelatine-like substance. The tumours, which must have been some length of

time in course of formation, caused no disturbance to the health of the animal until some six weeks previous to death, when general dropsy set in. A *post-mortem* examination showed extensive dropsy in both thoracic and abdominal cavities, the two containing together about nine gallons of fluid, straw coloured, and quite clear, containing no flocculi or any products of acute inflammation. The flesh had a good healthy colour, and the abdominal cavity was lined with fat.

Mr. P. Taylor opened the discussion by given it as his opinion that the specimen exhibited was a tubercular deposit, but after a more minute examination of the tumour the general opinion was that if the case was not one of colloid tumour it was certainly not the result of tubercular disease. Mr. T. Taylor, however, promised to procure the opinion of a microscopical expert as to its histological structure, and to present the report at the next meeting.

Mr. Peter Taylor then read an essay on "Spavin and Articular Disease of the Hock-joint." This paper, although but short, contained a large amount of instructive matter, and produced a very varied and instructive discussion, particulary so as regards the treatment of the disease, but nothing of a novel character was elicited except from Mr. P. Taylor, who recommended injections of morphia or atropine hypodermically over the seat of disease; and Mr. C. Elam, who in cases of bone spavin performed the operation of periostomy with good results.

The President's paper on the "Antiseptic Treatment of Glanders," for want of time was postponed to the next quarterly meeting.

The election of office bearers for the ensuing year was then proceeded with. Mr. T. Taylor proposed, and Mr. Dacre seconded, that Mr. Tedbar Hopkins be re-elected to the chair; carried unanimously. Mr. Dacre proposed, and Mr. W. A. Taylor seconded, Mr. Samuel Locke as secretary; carried. Mr. Alex. Lawson was re-elected treasurer, proposed by W. A. Taylor, and seconded by Mr. Faulkner. Messrs. Peter Taylor, Thomas Greaves, and W. Dacre were elected vice-presidents, and Mr. John Lawson and Mr. Tom Taylor auditors.

Mr. T. Hopkins presented the Society with a handsome ballot box, and suggested that the business of the society should be carried on by that mode of voting.

A cordial vote of thanks to the chairman, essayist, and returning officers closed the proceedings.

SAM. LOCKE, Hon. Secretary.

NEW MEMBERS OF THE PROFESSION.

AT the meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 7th and 8th, the

following Students from the Royal Veterinary College, London, passed their Final Examination, and were admitted Members of the profession :

Mr. Edward Allen	Dublin.
— James Cook	Middlesbro'.
— Wm. James Worster . .	Blisworth, Northampton.
— Frank Henson Gibbings . .	North Tawton, Devon.
— John Herbert Callow . .	Horsham, Sussex.
— Frederick Wallewski Forsdyke	Buckland, Dover.
— George Reed Dudgeon . .	Sunderland.
— Thomas Williams . . .	Malvern.
— Frederick Robert Stevens .	Norwich.
— Francis Kennedy . . .	Ennis, Co. Clare.
— Charles George Poulton . .	Coggeshall, Essex.

The Examiners recorded that Mr. Stevens had passed with "very great credit," and Mr. Callow and Mr. Dudgeon with "great credit."

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 9th, 10th, and 11th, the following Students from the Royal Veterinary College passed their "First Examination."

Mr. Albert Barr Medd.	Mr. John James Crowhurst.
— Frederick John Short.	— Frederic Gowland Rugg.
— George Crane Hunting.	— Nicholson Almond.
— George Sydney James.	— Alfred John Hickman.
— Frederick Elworthy.	— Edward Geo. Johnson.
— Frank Taylor.	— Henry Augustus Rumboll.
— John Henry Riches.	— William John Malvern.
— John Mossop.	— Edward Harvey Kelly.
— William Frederick Wright.	— John Trevor Jones.
— William Henry Beach.	

Messrs. Almond, Johnson, Kelly, and Rugg were recorded as having passed a superior examination.

At a meeting of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons held in Edinburgh, on January 21st, the following students from the Edinburgh Veterinary Colleges passed their "First Examination" :—

Mr. Alexander Mackenzie.	Mr. George Humphreys.
— Henry Vaughan Lloyd.	— William Henry Hill.

ROYAL VETERINARY COLLEGE—MATRICULATION EXAMINATION.

The following Freshmen have passed the Matriculation Examination and entered on their studies :—

Mr. E. E. Bennett.	Mr. S. B. Price.
— T. B. Cockshoot.	— R. J. Smith.
— J. W. Hawke.	— E. C. Wiskin.
— E. A. Hollingham.	— H. A. Willson.
— C. S. Hunting.	— G. H. Wyer.
— E. Langford.	

Mr. A. J. Down was admitted on Certificate, and Messrs. Bennett and Price passed with Distinction.

PARLIAMENTARY INTELLIGENCE.

USELESS DOGS.

HOUSE OF COMMONS, *January 22nd.*

Sir G. Douglas asked the Chancellor of the Exchequer whether he was prepared to propose any means by which the public might be protected from a recurrence of the injuries to person and property to which they had been so much exposed in consequence of the great increase in the number of useless dogs throughout the country.

The *Chancellor of the Exchequer*.—The hon. member will understand that I have nothing to do with the protection of the public in this matter beyond seeing that the Dog Tax is properly enforced. I have no doubt from information I have received that the Dog Tax is not so strictly collected as it should be. I am in communication with the Board of Inland Revenue on the subject, with the view of better measures being adopted for that purpose, which I hope will prove effective. (Hear, hear.)

ARMY INTELLIGENCE.

WAR OFFICE, *January 22nd.*

ROYAL ARTILLERY.—Veterinary Surgeon Herbert Rangeley resigns his commission.

LIMITATION OF THE NUMBER OF EXAMINATIONS.—Note from a STUDENT.

DEAR SIRS,—In reference to the examinations of the Royal College of Veterinary Surgeons there is one regulation which I will venture to call a mistake, viz. "That the number of times of presentation for examination should be limited." A few of my reasons are as follows:

1. Suppose a man of three, or four and twenty, who has spent all his time in the profession, to go up and by ill-luck fail to pass in the prescribed number of times, does it not

seem hard indeed that all the time, money, anxiety, &c., which he has spent should be thereby thrown away?

2. I maintain that it is very possible for a man to be well versed in all the subjects in which he is examined, and yet, owing to peculiar circumstances, fail to pass.

3. I believe that there are many students who because they do not in reality possess a natural liking for the first subjects of the curriculum have a great difficulty in mastering them; but who would probably become brilliant in the knowledge of those which follow, these constituting in chief, anatomy, physiology, pathology, and the practice of medicine and surgery.

Hoping you will regard this matter of sufficient importance for the insertion of this note in the *Veterinarian*,

I beg to remain, &c.

OBITUARY.

We regret to have to record the sudden death by apoplexy of Mr. George Harvey, M.R.C.V.S., late of Yarmouth, Norfolk. Mr. Harvey some years since retired from the active duties of his profession and engaged in agricultural pursuits at Belton. He was accustomed to make daily visits to Mr. Varnell, late one of the Professors at the College, who resides in the same parish. On the morning of December 21st he called as usual, and while engaged in conversation was attacked with apoplexy and died very shortly afterwards. Mr. Harvey was 69 years of age, and obtained his diploma February 14th, 1833.

To the above we add the death of another respected member of the profession, Mr. J. G. Dickinson, M.R.C.V.S., Boston, Lincolnshire, who died on January 19th, aged 45. His diploma bears date May 24th, 1853.

The following deaths have been reported to the Registrar:

Mr. G. E. Donaldson, M.R.C.V.S., Epsom, Surrey. His diploma bears date June 12th, 1844.

Mr. H. A. Muffit, M.R.C.V.S., Chesterfield. His diploma bears date March 29, 1875.

Mr. William Scriven, M.R.C.V.S., of Aberford, Yorkshire. His diploma bears date —— 1836.

Mr Richard Horner, M.R.C.V.S., of Keighley. His diploma bears date April 27th, 1865.

ERRATA.

In the list of Subscribers to the National Veterinary Benevolent and Mutual Defence Society at page 51 in the January number *for* D. R. Scruby, *read* D. R. Sowerby; *for* W. Pryer, *read* Wm. Fryer; and *for* J. Bailey *read* J. Barling.

THE

VETERINARIAN.

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Communications and Cases.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 60.)

Tribe X.—CICHORIACEÆ.

This tribe is distinguished as follows:

Leaves alternate, style cylindric, pubescent above; arms linear, half-terete, obtuse, pubescent at the back; stigmatic lines not confluent.

The genera are founded for the most part on the absence of pappus, or when present upon the structure of that interesting organ, and our native ones are diagnosed by Sir Joseph Hooker as under:

1. Pappus 0.—Lapsana.
2. Pappus a coriaceous raised border.—Arnoseris.
3. Pappus of short, broad scales.—Cichorium.
4. Pappus of inner fruits of feathery hairs, often dilated at the base.—Hypochæris.

Pappus surmounting a long slender beak.

5. Leaves toothed, outer invol. bracts cordate.—Helminthia.
6. Leaves quite entire, invol. bracts narrow.—Tragapogon.

Pappus surrounding a short beak.

7. Invol. bracts 1, seriate.—Picris.
8. Invol. bracts 2 to 3, seriate.—Leontodon.

Pappus hairs white, fruit with a long slender beak.

9. Fruit compressed.—LACTUCA.
10. Fruit muricate upwards.—TARAXACUM.
11. Fruit terete.—BARKHAUSIA.

Fruit with a short thick beak.

12. Fruit angled or terete, much compressed.—SONCHUS.

Here, then, we have an outline arrangement of twelve native genera, all of which have species of greater or less interest, but we must be content to note upon only a few of these, viz.:

1. *Cichorium*.—Chicory or Succory.
2. *Tragopogon*.—Goat's-beard.
3. *Taraxacum*.—Dandelion.
4. *Lactuca*.—Lettuce.
5. *Sonchus*.—Sow-thistle.

Here we have five very distinctive genera affording but few species, but all of them are important for the possession of medicinal or dietetic properties of the highest value.

1. *Chichory or Succory* is a native plant, more or less common to the white limestone districts of Gloucester and Dorset, and in other counties, probably introduced by cultivation. It is usually met with in waste places and waysides, where it becomes conspicuous by the bright blue stars presented by its heads of composite flowers.

Two forms of this plant are more or less cultivated throughout England and America, to whieh latter it has extended as an introduced plant; they are—

Cichorium Intybus.—Chicory.
„ *Endivia*.—Endive.

The first is known as an agricultural plant used as sheep-feed, of which two or three year old plants will yield a large quantity of succulent leaves, of which both sheep and cattle are particularly fond. It is stated, however, by some, that it yields a disagreeable flavour to the milk of cows fed upon it, while others tell us that the mutton of the sheep fed upon it is much deteriorated in flavour.

In Germany, the Netherlands, and France, chicory is much grown for its roots, which are employed as a substitute for coffee, some people, indeed, stupidly asserting that they prefer it to coffee; to such we recommend the following notes upon the subject:

"Chicory roots are not unwholesome, but they are destitute of any principle like caffeine, which would supply

the place of that substance in diet; neither have they the aromatic flavour or essential oil which belongs to the coffee berry. Chicory has little to recommend it but its cheapness, and this circumstance has caused its extensive employment, not alone as a substitute, but as an adulteration of coffee.

"Some short time since a report was drawn up by Dr. Letheby and Dr. Hassell on the properties of chicory, in which they say, 'No one who is acquainted with the respective properties of chicory and coffee can for a moment entertain that the former can be effectively substituted for the latter.' They point out that the two substances differ very materially from each other in their botanical nature, one being a fruit or seed of a tree, while the other is the succulent root of an herbaceous plant. 'Now it is a well-ascertained fact, that of all parts of vegetables the fruit and seeds usually possess the most active properties. This is no doubt due to the circumstance of their being freely exposed to the influence of light and air, agencies which promote chemical changes in plants, and so effect the elaboration of those complex organic substances on which the activity of vegetables depends. On the other hand, it must be manifest that as the roots are removed from the influence of these powerful agencies, they cannot be so richly endowed with active properties; and, indeed, there are but few roots which contain either alkaloids or volatile oils—the two classes of constituents which give to coffee its peculiar virtues.'

"In the preparation of chicory the older roots are selected. They are first cleansed in a very imperfect manner by washing, then cut into slices and dried in a kiln; in this state they are furnished to the chicory-roaster, who submits them to a rough kind of roasting process, somewhat similar to that employed for the torrefaction of coffee; after which they are powdered, the powder itself being frequently adulterated.

"In specimens of chicory-powder examined by the above-named gentlemen, adulterations were discovered of various kinds; carrots, parsnips, beans, mangel-wurzel, a Turkish plant known as coffina, roasted coca, biscuit-powder, burnt sugar, and red earth, were all detected by the aid of the microscope and chemical tests. Chicory is possessed of active medicinal properties, in consequence of which it has long been included in the Materia Medica."*

We are glad to find that the law is decidedly against the adulteration of coffee with chicory; at the same time it is difficult to prevent such fraud, and especially when purchasers are so careless, for we have heard of cases where

* 'English Botany,' vol. v, pp. 123 and 124.

people have ground their own coffee, in which a mixture of coffee berries, baked chicory, and burnt livers of horses and oxen, have been artifically prepared to imitate the true berries, and the rascality has passed unobserved.

Endive, which is perhaps only a cultivated form of chicory, is largely grown as a salad herb, for which it is extensively used, especially in winter, as being hardier than the lettuce; the latter is employed in summer, while the former takes its place in winter.

In Lindley's 'Guide to the Kitchen Garden,' published as long ago as 1831, we find the following:

Cichorium Endivia, or garden Endive, is a hardy annual, a native of the East Indies, and, according to the *Hortus Keirensis*, was cultivated here in 1548. For many years there were only three sorts cultivated in our gardens, namely, the *Batavian*, and the *green* and *white curled*; lately there have been several other varieties introduced by the Horticultural Society of London.*

Mr. Lindley goes on to describe as many as twelve forms, which were then susceptible of many variations, and it is just probable that these are now doubled, though perhaps some of the older ones have fallen into abeyance.

Endive has been long esteemed as a salad herb. Both the Greeks and the Romans cultivated it for this purpose, as also as a pot herb there can be no doubt of its being extremely wholesome. Its influence against scorbutic affections is very great, as in the blanched state the medicinal properties of the order—always mild in these plants—become lost and an alterative dietetic nutritious food remains.

2. The *Goat's-beard* is known to us by two forms—

Tragopogon pratensis, Goat's-beard.
„ *porrifolius*, Salsify.

The first is common to our meadows and waysides, where it often makes itself conspicuous by its spreading head of pappiform hairs surmounting the long fruits or seeds. It has a succulent root, and has been cultivated as a garden esculent for this part, but the second form with blue flowers is usually grown, and is known to the gardener under the name of Salsify. Of late years it has got the name of the oyster plant, as when well boiled, cut up into small bits, and scalloped in imitation of oysters, it is really difficult of detection, and especially if a little genuine, not artificially coloured, anchovy be judiciously added. Now that the bivalves are so scarce, it is well to know how to prepare a wholesome and

* Pages 545, 546.

nutritious supper, with not a few of the qualities of the mollusc.

Allied to the Salsify is the Scorzonera, which belongs to the same order. This is also cultivated for its roots, though we think not nearly to the extent it ought to be. Dr. Clarke says of it: "Its effects on the digestive organs are to increase the flow of gastric juice and bile, and as it acts as a deobstruent generally, it is slightly aperient. Its anti-bilious power is scarcely inferior to that of dandelion, if at all so, being, it is believed, superior in this property to any other esculent in use in this country; and it is on this account that it is one of the best remedies in many (if not in most) cases of indigestion, and especially for that state of digestive organs called bilious."*

There can be no doubt but that we have in both Salsify and Scorzonera, roots of great value, and as such we recommend their extended cultivation.

A packet of the seed of each sort can be got at any respectable seed shop at from twopence to sixpence each, which if sown in rows, each seed as near as may be at a distance of from two to three inches, in March, can readily be thinned, when large enough, to six inches, which are thenceforward to be weeded and hoed. The roots may be taken up in autumn and stored in sand, like those of carrots and beets, in which they will keep remarkably well, or they may be left in the ground and lifted as required. As vegetables they are extremely good with either roast or boiled meats, and should be served with white sauce and seasoned with pepper and salt.

In our next we shall dwell upon the remaining genera of our list, and then advert to the effects of the plants of this division upon the constitution, of horses, cattle, and sheep.

THE PENAL CLAUSE—HOW TO OBTAIN IT.

By Thomas Greaves, F.R.C.V.S., Manchester.

A penal clause is a clause in an Act of Parliament that gives a magistrate the power to inflict a stated penalty on any person who breaks such law. No charter containing such a clause in it could enforce a fine or penalty. I know it is the case that an overwhelming majority of the members of our profession are in favour of—nay, most anxious that we should possess—

* 'The Treasury of Botany,' p. 1041.

the power to indict any one who uses or assumes the name or title or profession of veterinary surgeon, unless such person has obtained the diploma of the Royal College of Veterinary Surgeons. At present we have no such power, and the only way we can obtain it is to apply to Parliament for an Act containing such a clause clearly defined and set forth. The questions are—*first*, what will be the cost? *second*, when will be the most opportune time to apply for it? *third*, how much will it benefit our profession?

1st.—We have it on the authority of our President, Sir Frederick Fitzwygram, that to obtain an Act of Parliament, if unopposed, would cost about £300; but if opposed that it is quite impossible to say how much it might cost, and even then be lost. Fifteen years ago I offered to subscribe £50 for this purpose, and there are now also many willing to subscribe for this object.

2nd.—The same high authority informs us that the present is an inopportune time, and he is confirmed in this opinion by Professor Williams, Mr. Harpley, and many others, who are most anxiously solicitous for the welfare of the profession, and who understand fully every circumstance bearing upon the question. I assure my professional brethren that there are many delicate and difficult questions which have to be taken into very careful consideration and handled with prudence; questions which it would seem many gentlemen who speak upon the subject do not comprehend, or rather they have not got the facts of the case before them by which they would be enabled to see their way and form a proper and correct opinion. They do not understand the true feeling. They have not witnessed, as I have witnessed, the intense desire which exists in the metropolis of Scotland to possess for themselves a veterinary charter for Scotland. This feeling seems to be so deeply rooted in the minds of some of the members of the corporate body, and some members of the Highland and Agricultural Society, that nothing can modify or remove it. They have not witnessed, as I have on more than one occasion, but more especially on the one when a deputation, appointed by the Royal College of Veterinary Surgeons in 1869, met a number of the members of the Corporation of Edinburgh and of the Highland and Agricultural Society—they have not witnessed, I repeat, the intensely strong feeling which exists in the true Scotch character and the persistent determination in the minds of these men to resist to the utmost. Mr. John Wilkinson, John Lawson, William Field, George Fleming, George Morgan, William Robertson, Professor Williams, and myself, tried

with all the power which in us lay to establish the fact that "union is strength" and that "disunion is weakness;" but all was utterly unavailing. If they had seen, as I saw that night, Mr. John Lawson for one whole hour in earnest argument with one of the Town Councillors, at one time bringing all his powerful mind, bristling with intense intelligence, to his aid, and at other times using his sweet fascinating smile and his winning persuasive manners, but all in vain; or had they seen Mr. John Wilkinson, the great diplomatist, and Mr. Menzies, Secretary to the Highland and Agricultural Society, sitting face to face for four hours, four mortal hours, within one foot of each other, engaged all the time in an intensely earnest discussion on the same subject, and seen Mr. Wilkinson break down and destroy all the outworks, clear away every obstacle, and approach the bare walls of the citadel itself; storm the citadel, carry it and dismount every gun, they would have supposed that the object must be gained.

But not so; at that moment I verily believe that any man of any other nationality would have surrendered unconditionally, and the Highland and Agricultural Board would have been a thing of the past; but Mr. Menzies, like a true Scotchman, believed only in the omnipotence of a separate charter for Scotland, and that they would have it. I saw enough on this occasion to convince me, and it convinced us all, of two things, viz.—1. That reason and argument were wasted, that there was nothing in this world so difficult as to convince a Scotchman against his will.

And, 2, that if we only touched the Scotch thistle by applying to Parliament for powers whereby we alone could give the title of veterinary surgeon, making it an indictable offence for any other person using the name and title, we should be certain to arouse such a powerful opposition which would be utterly impossible for us to overcome. I warn gentlemen, therefore, to beware how they stir up, without intending it, a feeling and spirit in Scotland which they may be quite powerless to guide or quench, by using language weak, irritating, and dangerous.

We then asked ourselves what was best to be done under the circumstances? And twelve years ago it occurred to our minds, and none were stronger advocates of it than the late Mr. John Wilkinson, John Lawson, and William Field, that the best means to attain our end was to get, if possible, every veterinary surgeon holding the certificate of the Highland and Agricultural Society to become one of us. Certain influences were, however, brought to bear upon them at the

time that they had finished their studies at the Edinburgh Veterinary College, and they did not, therefore, present themselves at the time for examination at the Board of Examiners appointed by the Royal College of Veterinary Surgeons. In after years it would seem, for one reason or other, that they felt a desire to possess our diploma, but a difficulty existed. These gentlemen had been engaged in daily practice for years; their minds had been wholly occupied and engrossed in establishing themselves in their businesses; they had forgotten many of the scientific points necessary for them to know if they must pass the ordinary examination. To meet this it was necessary for us to suspend a certain bye-law, and admit these gentlemen, not by a back door or a side door—we have no such doors—but by a formal or practical examination. This was done in 1866. The whole country approved what we did at that time. Thirty or forty gentlemen, or more, availed themselves of this means to enter the corporate body. Now, let us for a moment examine this process, and see how it acted. Up to the moment they obtained our diploma they belonged to another party. They used that party's arguments; their sympathies and leanings were all for that party. This party had all along a strong, an intense antipathy towards the Royal College of Veterinary Surgeons. The idea of antagonism was instilled into their minds and fostered. They were shown that the certificate was in every sense as good as the diploma; that he who possessed it could enter into the Honorable East Indian service and enter also Her Majesty's service and practise as a veterinary surgeon without let or hindrance. There continued, therefore, to exist a sort of clannish feeling, and many of the gentlemen with our diploma looked down upon and treated those holding only a secondary title, as being inferior to them. Some would not meet them in consultation. Thus was schism and antagonism kept up, and a divided profession perpetuated.

But what took place after they became members of the corporate body? This is the point I wish to call attention to especially, since I believe there is very much in it. A change has come over these gentlemen. They are now one of us. They adopt our views and arguments; all their sympathies and leanings are with us; and thus it is that so far as they go they contribute to make our profession one strong and united body.

At the present time there are a few more who no doubt have had an influence exerted over them like that alluded to at the time of leaving college. They now want to come in and be one with us; they are willing to pay the full fee, but,

having been in practice three or more years, being daily occupied in their businesses, they cannot spare the time to pass the three examinations as required by the present rules. What our President now asks is that the bye-law shall be suspended again, in order to receive these stragglers into our corporate body. This, as far as it goes, strengthens our cause, and in exactly the same ratio weakens that which opposes us.

It may be asked are we to do this again and again indefinitely? I reply, No; we have the best of reasons for feeling certain it will be wholly unnecessary in a very brief space of time.

I wish to impress this fact upon my professional brethren, that the only object or purpose of our President and those who act with him is to so conduct this matter as not to give offence to the sensitive feelings of our Scotch competitors, and to bring about at the earliest moment possible a discontinuance of the Highland and Agricultural Societies' examinations, and create a real and truly united profession, with only one examining board and one diploma. We believe this is the surest and safest method to attain this very desirable end.

We find that Professor Dick's College was never exalted or endowed by a charter of any description. Even the Highland and Agricultural Society of Scotland, which is purely and simply an agricultural society, has no clause in its charter to appoint a board of examiners to examine veterinary students. They arrogate that power, which is quite an illegal act. They have no more legal or moral right to do so than the Royal Agricultural Society of England, or even our Altrincham, Swinton and Worsley, or Middleton Agricultural Shows have; and what, let me ask, would be thought of a certificate (call it a diploma if you like) presented by any one or each of these bodies, a certificate setting forth that the holder was thereby authorised to practise the art and science of veterinary surgery? Would it not smack of the absurd and the ridiculous? And yet these bodies have quite as good a right or claim to do so as the Highland and Agricultural Society of Scotland has. Is it to be wondered at that the holders of this certificate only soon feel the want of something better? But only whisper to the Highland Society or Corporation of Edinburgh that our diploma has more weight, more importance, because it emanates from a charter granted to the United Kingdom of Great Britain, and the effect produced by such a whisper may be likened to a red rag shaken before a bull's face.

As to the suspension of the bye-law being an injustice to

other students, that is not worth dwelling upon for one moment. It is really a very narrow view of the question, when we allow our minds to be circumscribed and warped by petty personal jealousies, and refuse to see the great national importance of the movement. Such men cannot understand this, and that it is when we have no opponents in the field, but not until then, we can succeed in obtaining that long cherished wish, viz. an Act of Parliament containing the clause so much coveted. This is the banner we wish to raise.

3rd.—The benefit to be derived by the members of our profession will be, in the first place, the satisfaction of seeing that no one can use the title of veterinary surgeon upon his door-plate, bill-head, &c., unless he possesses the diploma of the Royal College of Veterinary Surgeons; and that if he does use the title, and does not possess the diploma, he can be indicted and summoned before a magistrate, and fined £10 for each offence, or any other sum the Act may specify. The qualified man will then occupy a higher status, and the non-qualified man will be degraded.

In the second place, the non-qualified man will appear now in his true colours, whether he calls himself farrier, horse doctor, cow leech, or any other grand title he may think best, and some of his employers may probably leave him and go to the nearest qualified man. Many of my professional brethren go much farther than this, and, speaking as they would wish it to be, would say, "Oh, yes; they would all leave him and flock to the qualified man, and thus fill his coffers." But not so fast, my friend; it will not be so. There are many men practising, both in town and in the country, who are well known to be non-qualified men, but who, it would appear, are more appreciated and more popular because more successful than the qualified man in the locality is. No, take my word for it, even when we have got this penal clause we must prove ourselves to be thoroughly competent and practical men, or the public will continue to call in and employ the non-qualified man, notwithstanding he has altered his signboard. In conclusion, let me beg most earnestly that we all remember this, that everything depends upon ourselves individually to make our profession what it ought to be. Let us never show a carelessness and indifference in the performance of our duties. Let us be diligent and industrious, cultivate kindly, pleasant, and agreeable manners; be gentlemanly and honorable in all we do, and avoid, above all things, making charges out of all proportion to services we render, and then, I say, it must

follow, provided always that we possess a thorough practical knowledge of our business, that we shall be able to make and sustain a character and position which will be all we can desire.

VETERINARY PRACTICE.

By R. H. Dyer, M.R.C.V.S., Limerick.

Much has been written from time to time in reference to the practice of and fashion in veterinary medicine, the latter especially. I do not pretend to follow in the wake of fashionable practitioners, because it savours of empiricism to a certain degree; but simply to follow the dictates of common sense, as based upon a study of natural history, that is to say, a study of the natural habits of our patients, which is, I believe, the surest and best foundation to rest upon. Many of us remember the ominous words made use of in former days, of the antiphlogistic treatment of all inflammatory complaints and so forth, which mode of treatment was doubtless adopted by the students of that day. Those men who went into the world with a determination of thinking for themselves, I do not hesitate to affirm, sooner or later modified their practice. I did for one. Venesection was declared to be the "sheet anchor" for all inflammatory diseases; but we found other modes of treatment in many cases of this class infinitely more effectual than the abstraction of blood, and certainly more convenient. Of the thousands of horses I have constitutionally bled I never could declare that bleeding saved life, except in a solitary case of suppression of urine, where the bladder contained an immense quantity of fluid the escape of which was impossible, owing to the spasmodic condition of the sphincter muscle. The owner objected to the use of a trocar, which necessitated the abstraction of the vital fluid. In three days I abstracted no less than *twelve* gallons of blood, and had the satisfaction of producing the desired effect. The patient was partially paralysed for some months prior to this attack. In the present day a different mode of treatment would be adopted, but at that period bleeding being so much practised, it was believed to be the more reliable treatment.

With regard to the mere abstraction of blood, I have not so great an objection as many of my brethren, as I frequently employ topical or local bleeding, but general or constitutional

seldom, simply from the fact that I can gain all I desire by simpler and, I hold, better means. It does not follow that because an animal is supplied with arteries and veins, these vessels should in disease be opened at the caprice of the veterinary surgeon. I should not entertain a very exalted opinion of a veterinary surgeon who pursued the same mode of treatment of diseases of an inflammatory type now as was adopted thirty years or so ago. It could not be said of him that he had kept pace with the times.

I remember when, in cases of colic, we used to bleed and administer spirituous tinctures and other such medicaments. In the present day, and for years past, my treatment has been different, and certainly more scientific, as well as more successful. It is a very rare thing now-a-days for an animal to succumb from such ordinary complaints, and *never*, unless complications are present, and these complications the result of old diseases. There are fashions in medicine I have no doubt, but when fashion is followed for the sake of fashion, then I should not feel inclined to follow it any more than I would imitate "Banting," because he originated that ridiculous system. Every man should strike out a course for himself, always keeping in view the laws of nature, for without a study of natural laws we shall become sorry practitioners of brute medicine. For many years I have held that to become a practical man we must study nature more than art. But it is absolutely necessary to study art at the same time.

A veterinary student should not only spend much of his time in the stable, but in the paddock also, if he wishes to attain knowledge, and should also understand the various modes adopted in training horses, both in the field and on the road, together with the proper mode of putting on their harness. Horses acquire many habits by being improperly and imperfectly educated, and the veterinary surgeon is now and then called upon to give an opinion upon such cases. The education of a veterinary surgeon does not finish with his collegiate studies. It is then indeed that it only commences.

Much could be written upon this subject, but for the present I will refrain.

VETERINARY SURGEONS AND HORSE DEALERS. THE EXAMINATION OF HORSES AS TO SOUNDNESS.

By A. H. Santy, F.R.C.V.S., Norwich.

I believe that most practitioners have experienced the unpleasant position of having to examine a horse as to soundness for a client, when the vendor (a horse dealer) is present, at either of their respective establishments. If the examination has to be carried out at the dealer's, he will remember the hundred and one things which are talked of, to purposely divert attention from the subject in question, viz. the soundness or unsoundness of the animal. The veterinary surgeon may get on pretty well during that part of the examination which is conducted in the stable and whilst the animal is standing, with the exception of being talked to and talked at; but when he wants a straight and slow run out in hand then come his difficulties, for he has not only the dealer to contend against, but also his man. The animal will be made to run too fast, or scarcely to run at all, or the man will excite the animal too much, or hold his head so tightly that any slight lameness is likely to escape notice. If after the examiner has gone through the general routine he believes the horse to be sound, and says so, he has simply done just the right thing, and in most cases this is all, according to the dealer's idea, that he need care about him. But supposing he detects a slight bony enlargement at the seat of spavin, or a corn in one fore-foot, or the one fore foot is smaller and of a different shape to the other, and he notes these defects, and supposing also that his client has a horror of an unsound horse, and wants "yes or no" as to the soundness, and will not take the horse if the examiner cannot pronounce him to be sound to the best of his belief, for he wants no half measures, then comes the abuse, bullyism, and often blackguardism of the dealer; the examiner is everything that is bad, and knows nothing of his business. Possibly one or other of the defects I have mentioned or some other exists to so slight a degree that in the opinion of the examiner it may never interfere with the usefulness of the animal, and he suggests that if the dealer will stand by the particular defect for a given time, he would advise his client to take the animal; but no, as he cannot say the horse is sound, there is the end of the transaction. Perhaps he is now told in a

jeering tone that Mr. A, B, or C, would pass the animal, which I am sorry to say in some cases is true.

It is surprising and even painful to me that members of our profession are not more coincided in their opinion respecting what constitutes unsoundness. A horse to be legally sound is one thing, practically sound another, and members of our profession who deal largely in horses are apt to imbibe more of the ideas of the dealer, and of necessity lose that delicacy of decision, so essential to a scientific veterinary surgeon, which enables him to distinguish between a sound and an unsound animal. We as a body lose respect for the want of sticking to our motto (Vis unita fortior), thus helping each other, and by our unprejudiced and independent opinions force the public, and especially the dealer, to respect us by proving that he cannot get the verdict of the existence of bone spavin, and consequent unsoundness of the animal, one day, reversed the next by a declaration of no spavin at all and perfect soundness. I am aware that in many cases it is difficult to decide between exostosis and the natural formation of the hock; but I contend, and am borne out both by morbid specimens and by gentlemen in the profession, that where we find one hock decidedly larger (and when I say decidedly, I mean that there ought not to be two opinions on the subject) than the other at the seat of spavin, both examiners cannot be right. There ought, indeed, to be no difficulty in conscientiously pronouncing such a hock to be diseased, and consequently that the horse is unsound. By so doing we should prevent such unscrupulous men bandying our names and our reputation in the most uncomplimentary and detrimental manner possible.

CASES OF BLOOD-POISONING.

Communicated by T. F. Hutchinson, M.R.C.V.S., Leyland, Preston, Lancashire.

Dear Mr. Simonds,—Induced partly by the desire to have your opinion upon what at present seems a mysterious case, and partly because I thought the matter would not be without interest to yourself, I have taken the liberty of forwarding to you by rail a box containing certain viscera, viz. the spleen, portions of the stomachs, and small intestine of a four-year-old cow. The cow, which was heavy in calf, was one of a herd of twenty-six well-bred dairy cows, the property of

a farmer at Walton-le-Dale, near Preston, all of which up to Sunday, Jan. 20th, were in good health. On that day one of the cows refused her food, gave less milk, and in a very few hours (five or six) was dead. The next day two more died, and up to Wednesday noon seven had died or been slaughtered when in "articulo mortis." On that day the services of a qualified veterinary surgeon, Mr. W. Heaps, of Preston, were first made use of, and I was also requested to meet that gentleman in consultation the same evening. On our arrival we found that the carcases had been dressed for food (the meat being fairly good in colour and firm to the touch), and with the exception of the spleens, stomachs, and intestines, the whole of the viscera appeared healthy. The stomachs, filled to repletion with ingesta, showed patches of congestion on their inner surfaces, the lining membrane being easily detached in all of them; in one case only were the small intestines extensively diseased and filled with thick sanguineous matter. The spleen in each case was gorged with blood, though in some cases to a greater extent than in others. Four beasts were ailing at the time of our arrival; the symptoms observable were not at all remarkable, being chiefly of a febrile character. The pulse varied from 55 to 75 in the several animals—temperature variable—animals looking dull and dejected; membranes slightly injected, appetite lost, and secretion of milk suspended. In one case only were there indications of *abdominal* pain, and in this case only to slight degree. We were told that the beasts which had died had all presented analogous symptoms, and had not *seemed very ill* until within fifteen or twenty minutes of death, when the breathing became very laboured, violent tremors set in, and the beasts literally dropped dead.

In *two of the cases only was there purgation*, the fæces being very thin and mixed with blood.

The four animals ailing on our first visit did not get worse, but gradually recovered, and may now be said to be convalescent.

There were no new attacks until Tuesday the 29th, when the animal from which the remains sent you were taken was observed to refuse its food in the morning, seemed somewhat better about 5 o'clock in the afternoon, and was found dead at half-past. Four more were not feeding yesterday (Wednesday), but no more deaths had happened up to last night.

The diet, which was liberal, consisted of crushed linseed cake, maize meal, distillers' grains, and hay. With the exception of the maize meal and hay the food was changed from the beginning of the attack, malt culms, bran, and chopped

hay being substituted (through a misunderstanding the use of the maize meal was not discontinued until Tuesday last). The water in use is taken from a running brook and appears to be pure in character.

Anything I have omitted in this hurriedly written and necessarily imperfect account I shall be happy to inform you of. The question which presents itself to my mind is, did these beasts die of *splenic apoplexy*, or from the effects of some irritant taken in the food or water? I need not say I shall be very glad indeed to have your opinion. I should add that portions of all the feeding stuffs, water, contents of stomachs portions of liver, spleen, &c., have been sent for analysis.

I must quickly close this note to save post.

Yours very truly.

[Our reply to Mr. Hutchinson was that all the parts sent for examination showed the characteristic lesions of blood-poisoning. The spleen was not much enlarged, but was nevertheless filled with black and grumous blood. Patches of congestion existed on the portions of the stomachs, and the small intestines were deeply stained with the colouring matter of blood, and were also filled with effused fluid composed mainly of changed blood and mucus.

For the purpose of testing the septic condition of the blood a full-grown healthy rabbit and two Guinea pigs were inoculated at 4.30 p.m., on the inner part of the thigh. Two *needle* punctures, needle only soiled with blood from the spleen.

All the animals appeared well and took their food to within a few minutes of death. No 1 Guinea pig lived about *forty-four* hours. No. 2 Guinea pig *sixty* hours. Rabbit *sixty-four* hours. The blood of each was found to be loaded with bacteria.]

Apropos of these cases, the following account of the death of a butcher from blood-poisoning appeared in several of the public papers on Feb. 21st:

"CATTLE DISEASE AND BLOOD-POISONING.—An inquiry of some importance was resumed yesterday, Feb. 20th, by Mr. Carttar, coroner for West Kent, as to the death of William Wallace Bell. The deceased, who was 29 years of age, and had been married only seven weeks, was a butcher in the employ of Mr. Crittel, at West Wickham, near Beckenham. The evidence, so far as it has proceeded, seems to establish the following facts:—On the 31st ult. a bullock belonging to Mr. Henry Still, a farmer and salesman at Addington, was discovered by the bailiff to be lying down in its stall, apparently in a state of suffocation. He at once obtained a knife, and cut the animal's throat. The deceased and another butcher were sent for to dress the carcase. Some days afterwards the deceased complained of pain in his right arm, which was con-

siderably swollen, and Dr. Booth, of Beckenham, was called in, who at once declared the symptoms to be those of blood-poisoning. He gradually became worse, and died on the 12th inst. It appeared that at the time of dressing the carcase Bell had two slight wounds or scratches—one on the hand, and the other on the arm. The theory has been suggested that the bullock which he dressed had been suffering from some form of cattle disease, and that the abrasions of his skin allowed some of the animal's vitiated blood to enter his system, and produce the result described. Singularly enough the man who cut the bullock's throat, and who in doing so got some of the animal's blood sprinkled over him, was attacked about the same time as the deceased with almost precisely similar symptoms, though in his case the medical treatment had proved successful. The butcher who assisted the deceased in flaying the carcase also felt some pains about the arms and feet, but there seems reason to suppose that in his case the effects were due entirely to his imagination and fear on hearing of Bell's sufferings. Mr. Still and his bailiff denied that previously to the bullock's death there had been any indication whatever of disease in that or any other of the cattle on the farm, and they alleged that its *post-mortem* appearances showed nothing but a somewhat congested and discoloured state of the lungs. The carcase, after being dressed, was taken away by Mr. Plowman, a butcher, of Croydon, Mr. Still telling him to 'take it and do the best he could with it for him.' About a week afterwards a pig which had been in the farmyard was found dead, and was immediately buried, and it is now thought possible that it may have been killed by eating the offal or blood of the deceased bullock. The inquiry was adjourned.

"Mr. Cope, by direction of the Duke of Richmond and Gordon, attended to watch the case on behalf of the Veterinary Department of the Privy Council, and Mr. W. H. Rowland, solicitor, appeared on behalf of Mr. Still."

TYPHOID FEVER IN THE HORSE.

By L. Butters, M.R.C.V.S., Norwich.

As I have noticed several statements lately having reference to the existence or not of the above-named affection in the horse, and particularly a very decided opinion as to the impossibility of such a thing, in a discourteous article in *Bailey's Sporting Magazine* for October last, called forth in consequence of a report of Messrs. Mavor and Field as to the nature of a disease which proved fatal to several race horses at Newmarket, in which the writer said he had searched in vain amongst veterinary authors for an account of the disease, and having myself also done the same thing especially in

the recent elaborate works of Professor Williams, where I was disappointed not to find mention of it, I am led to make the following remarks respecting a complaint which has often come under my notice, in the hope that they may elicit something from your numerous contributors to enlighten the profession further upon the subject. The complaint I will endeavour to describe I first saw in Liverpool, principally, if not wholly, amongst draught horses, while I was assisting Mr. T. Simpson, M.R.C.V.S., of that town. It commenced in the autumn, continued a little under six months, seemed to spread very rapidly by the medium of infection, and proved exceedingly fatal to a large percentage of the animals attacked by it. The symptoms of the affection were as follows: the animals were suddenly attacked, the premonitory symptoms being usually a shivering fit, loss of appetite, in fact, entire loathing of food, with great thirst, breathing slightly accelerated, but not always so at first, internal temperature high, external surface of the body also hot, pulse very quick and weak, rapidly rising to 80 or 90, mucous membranes highly injected, eyelids swollen and half-closed, mouth and tongue clammy, the latter organ furred, grinding of teeth, the animal very much depressed, and standing "all of a piece." As the disease progressed the bowels became relaxed, the fæces being very thin, dark coloured, about the consistency of thin paste, and emitting an offensive odour. On introducing the hand into the rectum it would either be found filled with fluid, or else, if empty, would be in a dry state, the internal surface of the membrane being covered with a lymphy deposit which would stick to the hand and arm. As the disease proceeded the tongue would become thickly furred, and on its lateral parts, and also on the buccal membrane around the gums, an excoriated condition existed, the mouth having a foul smell. There would also be a discharge often of a purulent nature from the eyelids, and dull abdominal pain, manifested by the animal constantly pawing with the fore feet, usually in one particular corner of the loose box, but never lying down. I have seen patients for days previously to death constantly scraping at one place, often wearing the bricks at that part. Towards the fatal termination of the disease, which in the majority of cases was about ten or fourteen days after being first attacked, the animal would present a very haggard countenance, the pulse becoming very high and often imperceptible at the jaw, and accompanied with a sort of metallic beat of the heart. I noticed there was little chance of recovery if there was any chronic disease of any organ of the

body, especially the liver, which is not unfrequently enlarged amongst draught horses in consequence of the rich feeding practised in the town. On making a *post-mortem* examination, the lungs would, with the exception of being congested, show little evidence of disease; the liver would be also congested, but on examining the stomach and intestines, throughout their whole course congested patches would be found, and in most cases extensive ulceration, the ulcers usually penetrating the mucous coat, the edges of which curling up would give a thickened appearance. The ulcers were of a dirty grey colour, and would be found in large numbers throughout the whole course of the intestines; I have also found them on the villous portion of the stomach, but that would oftener present the appearance of one or two large congested patches of a light rose colour; the intestinal canal would contain a quantity of fluid fæces, and in some places the membrane would be considerably thickened.

I have recently been called in to treat two cases in Norwich, both light horses, one last year, a brewer's traveller's nag, which proved fatal; the symptoms and *post-mortem* were as I have described; the other a brougham horse, I paid the last visit to-day, February 6th, the animal being, I am glad to say, convalescent.

While saying a few words as to the mode of treatment, I will take the opportunity of offering a few remarks on the theories of certain writers and others as to the action of particular drugs in this and other complaints of a febrile nature. They will maintain that by the exhibition of agents of a sedative nature, such as aconite, belladonna, &c., you will reduce the temperature, diminish the frequency of the pulse, &c., entirely ignoring the cause, and treating symptoms. I believe that such affections have a certain course to run, and as Sir Thomas Watson, in his *Principles and Practice of Physic*, says that he entirely agrees with the medical man he quotes, who on being asked what he thought of a certain treatise on fevers replied, "I do not like fever curers; you may guide a fever, but you cannot cure it. What would you think of a pilot who attempted to quell a storm?" In a disease such as I have attempted to describe, and many others of a like debilitating nature, I am convinced that such treatment is not scientific, is very reprehensible, and about as effectual in hastening the death of the animal as the pole-axe. The mode of treatment I would pursue would be first to attend to the comfort of the patient, placing him in a good, roomy, well-ventilated loose box, giving him pure water, keeping the body at an equable temperature, trying him with

small quantities of easily digested food, demulcent drinks, as oatmeal gruel, linseed, &c. If any medicinal agents are to be used there can be no objection to the salts of potash, the nitrate or sulphite. As the disease advances and the animal becomes weak, eggs beaten up with good beer, wine, Spts. Eth. Nit., Tinct. Gentian., Tinct. Cardam. Co., should be administered, especially if the giving of draughts does not distress the patient too much, and, when approaching convalescence, vegetable tonics, quinine, &c., taking care to avoid anything of an irritating nature. This seems to my mind the only rational mode of treatment, and one which will generally conduce to the favorable termination of the disease.

FASHION IN THE TREATMENT OF DISEASE.

By John Gerrard, M.R.C.V.S., Market Deeping, Lincolnshire.

If we carry out the metaphor suggested by the pathological ideas enumerated by Mr. Gresswell, viz., "that inflammatory action is not due to an alteration in the walls of the blood-vessels, but to changes in the blood itself," we shall find that they land us in Red Republicanism. He puts too much power into the hands of the *plebs;* the corpuscles, being the most important elements of the blood in inflammation, might be taken as representing these functionaries.

He seems to forget, or perhaps does not choose to remember, that the animal economy is governed on the constitutional monarchical principle. We have the king or governor in the brain, with the various nerve-centres and ganglia as his ministers and advisers—his cabinet, in fact, who can initiate movements and give orders, but which require his sanction before war can be declared, so as such, an important proceeding as inflammation is sanctioned.

Let us suppose, for instance, that a good sharp vesicant is applied to the walls of a healthy chest, what takes place? Before the active agent has penetrated the epithelium, a telegram from one of the never-wearying sentinels informs the governor that an enemy is on the border, and likely soon to make a serious eruption on his territory. A return telegram informs the local governors and plebs to activiate their movements and fortify the position, extrude the enemy and repair the breach.

In order to enable them to do this, another telegram is sent *viâ the vagus* to the cardiac arsenal that more material

is needed, the resident governor there is all attention and hurries off the supplies, while the respiratory minister in the mansion house, the "*oblong medulla*," gives the word "attention" to his servants, the breathing agents, and who are soon vigorously at work assisting the cardiac satrap with supplies. These are soon apparent in the elevation of cuticle and a discharge of serum which fortifies the part, and if the enemy is not too strong repels his advance, without leaving much trace of his presence.

Now, in this simple process we find the plebs, although of essential importance as carriers and builders in the economy, are merely passive agents, and have always to be acted upon by some extraneous force, and under no circumstances the first to strike or initiate a stasis. They, in short, act the part of the rank and file in a well-organised army.

To descend from metaphor, however, we find that the simple process described is what occurs in all inflammations of vascular tissues—that the stasis is preceded by some irritation or tissue change outside the vessels inducing a change in the vessels themselves sufficient to disturb the correlation between them and their contents; in the words of Professor Lister, "that the corpuscles draw to each other, not because they are themselves in an abnormal state, but because the living tissue by which they are surrounded is altered." In the febrile state the same process is apparent, and even when the blood is charged with fever poison it has not invariably an inflammatory tendency or a tendency to stasis, as should be the case if the initiatory changes began in it. In fact, inflammation is always the result of some irritation *direct* or *indirect*, of the tissue affected, either by chemical or mechanical agents or by means of substances conveyed to the blood through the lymphatics or vessels. Dr. A. Ryneck has shown that all the phenomena of stasis can be produced by irritation in the webs of frogs in which milk or defibrinated blood of mammalia has been substituted for the circulating fluid. If the web of a frog's foot, which had milk injected into the circulation and completely displaced, the blood be touched with a rod moistened with ammonia, the phenomena of stasis occur in the irritated part. When defibrinated blood is used the results are even more striking, for in this case the choked vessels soon exhibit in every respect the same appearances as in ordinary inflammation. These results, says Burdon Sanderson, seem to make it perfectly clear that the local changes which lead to the production of stasis must have their seat either in the walls of the vessels, or in the tissues which immediately surround them.

To determine this more precisely Dr. Ryneck varied this experiment by first filling the vessels with an indifferent liquid, such as a solution of common salt of proper strength, so as to remove the blood; then subjecting their internal surfaces for a few moments to an agent which, by virtue of its chemical action, might be expected to modify or destroy its vitality; and finally, after replacing the injurious liquid by milk or defibrinated blood, observing the effects of local irritation. Solution of chromic acid, chloride of gold, and sulphate of copper, were found to be well adapted for thus acting on the vessels. The results were decisive. No stasis was produced by irritation in webs which had been thus treated.

To ordinary observers, and even extraordinary, this evidence would be deemed and is regarded as conclusive, but Mr. Gresswell must be a most extraordinary observer, for he cannot believe that facts such as these, elicited from a frog in such a mutilated condition and possessed of such different physiological properties, can be brought alongside or compared with the pathological condition of the horse. Well, if he, as the result of observation, has discovered any difference in the phenomena of inflammation in warm and cold blooded animals, he will be entitled to the thanks and gratitude, not only of the profession but of the whole scientific world; in fact, his name will be entitled to be handed down to posterity as the grand discoverer of the proper means of interrogating nature on one of the most important processes, both for good and evil, occurring within her pale, if he will make it known. But we will require something more than his *ipse dixit* for it.

Nor is inflammation in non-vascular structures affected by this theory, for it is always occasioned by irritation either applied directly to the part or indirectly through the source whence cartilage or cornea receive their nutritive supply. It is essentially a process of growth and development, and establishes the doctrine of textural pyogenesis. If you irritate a piece of cartilage by scraping it, the cells enlarge and expand their capsules. The protoplasm of which each cell consists becomes more granular, and soon is found to have two corpuscles instead of one. These go on dividing and subdividing until every cavity contains a mass of nucleated cells, which ultimately assume the characters of pus corpuscles; the interstitial substance gradually wastes away, and leaves nothing but a sponge-like stroma in which the young cells are contained; these live at the expense of what remains and eventually destroy it altogether. Or the process may

be arrested by the removal of the irritant; in this case more or less thickening of the cartilage and opacity of the cornea will be the result. Whether this capacity of non-vascular cells to take on pyogenesis, when irritated, be the result of direct stimulation of the cells, or of impressions reflected to them by an unknown nervous centre supposed to preside over nutrition, I am somewhat a loss to decide. It is certain that they are capable of very active cell-formation on direct irritation, and the development in the softened tissue of new vessels from the adjacent vascular area, and with these an extension of the vaso-motor system of nerves which are considered to be under the control of an excito-motory centre, the exact locality of which is one of the unsolved problems of science.

It seems to me as if Mr. Gresswell ignored the action of the nervous system in inflammation and in disease generally; for he says that "the cause of disease in plethoric animals is the abnormal quantity of blood existing in the vessels," "and that the effects of bleeding can be defended on mechanical principles," "and that its action is primarily upon the hydraulic principle."

When we consider that the bodies of all animals are formed upon one uniform plan, so arranged as to ensure, as far as possible, not only life but safety to all, even at the expense of occasional discomfort to some, and that this arrangement is such as may be regarded as the best possible for an irrational animal, we cannot fail to perceive the utility and importance of the nervous system and its correlation with other systems in the production and cure of disease.

"The nervous system," says Travers, "forms the portal as well as the herald of all diseased action; and no altered action, of whatever description, can be instituted but by its medium." Nor can any treatment of disease be efficacious unless a due regard is had to its agency. Now, if bleeding can be defended on purely mechanical principles, and its action is that of hydraulics, a simple diminution of the whole mass of blood in the system, the nervous system has been created in vain.

But it cannot be defended, for it is the nervous system that first feels the effects of the loss of blood, and the impression made on the brain reacts upon the heart; and this is regarded by the best authorities as the *modus operandi* of bleeding, and not any mere diminution of the mass of blood or removal from it of any poisonous or inflammatory element. It is impossible that the mere abstraction of one portion of

blood, to be immediately replaced by another portion of precisely similar blood, could have any effect in checking an inflammation, except by influencing the vitality of the part, in the way of weakening it, and thus the rather to favour than prevent or check it.

It is long since M. Andral pointed out that plethora or an excess of blood does not predispose to inflammation, and further, clinical facts and statistics tend to prove that excessive depletion tends to produce, or at least to favour, the occurrence of inflammation. Dr. Graves records a case where a poor man was bled five times for a fit of apoplexy, and had been debilitated by various other depletory measures, and in three days afterwards, while lying exhausted and drained of blood, inflammation commenced in the pleura, and went on to a fatal termination unchecked by remedies.

"There are none," says Dr. Alison, "who resist the exciting causes of inflammation so well as those in whom the blood is abundant, and the vascular system vigorous. But the tendency to inflammation is remarkably given by all permanent causes of debility, by imperfect nourishment, impure air, long-continued heat or cold, excessive evacuation, and intemperance."

These facts seem to prove that the mere diminution of the quantity of the blood in the organism is of no avail in checking an inflammation, and, *a fortiori*, it cannot cut short an inflammation already begun, however much it may, by a general diminution of the vitality, mask the more important symptoms.

But that it does produce a certain effect upon the system is obvious, at least to all those who have witnessed a sudden depletion in such a case as Mr. Greswell describes, but not just in the way he would have us believe, but rather in the way I have endeavoured to point out, viz. its action upon and through the nervous system.

Consistent with his previously expressed pathological opinions, Mr. Gresswell goes on to try to prove that an excess of *nitrogenous elements* in the blood gives rise to inflammation of the kidneys, and "*an excessive quantity of albuminous material suddenly introduced into the system of a horse will produce laminitis*, and gout in the human subject."

This is rather a new doctrine to me; it is evidently Lincolnshire pathology, and I should much like to hear the reasoning and the facts by which it is supported. Inflammation of the kidneys is rather an uncommon condition in the lower animals, and if it ever occurs is usually the result of infective materials from some primary lesion, and conse-

quently belongs to the class of infectious inflammations. The effete nitrogenous elements of the body leave it by the kidneys in the shape of urea, and for the removal of which the secretion of urine seems specially provided. If from any cause the functions of the kidneys are suppressed, the accumulation of urea in the blood is very soon productive of serious mischief, indeed it is inimical to life.

It is the first time I ever read of its being the cause of nephritis, which is mostly caused by indiscretion in the administration of irritant diuretics. The phenomena that appear as a consequence of an excess of nitrogenous elements in the blood was first described by the late Mr. Haycock as "hysteria," and is now known, as described by Professor Williams, as "*azoturia*," the symptoms of which are altogether different from nephritis.

Nor is Mr. Gresswell more happy in his illustration of the effects of "*albuminous material suddenly introduced into the system of a horse.*" Even although it were true that a quantity of albuminous food suddenly introduced into the system of a horse will produce laminitis, it does not prove "that the blood is the *vera causa* of inflammation." When a horse eats a quantity of wheat, that every one knows will give rise to laminitis, if it do not first kill him by enteritis, he cannot, properly speaking, be said to have eaten highly albuminous food. Indeed, it is a typical food, having all the elements in proper proportions for sustaining life, hence its universality. But, notwithstanding it composition as a typical food, it seems very ill-suited for the economy of the horse, and he is almost certain to be affected with enteritis or laminitis from its immoderate use. Nor is it the albumen contained in it, or indeed any other food, that will of itself produce inflammation, however suddenly introduced into the system. Laminitis arising from a sudden ingestion of wheat, barley, or maize into the stomach of a horse is the result of direct irritation of the mucous membrane, and probably the development in it of some irritating and even poisonous gas, such as *phosphuretted hydrogen,* as we know the ash of these cereals contain a large *percentage* of phosphorus, especially wheat, and takes place in the way of metastasis, which is generally regarded as the result of an erratic or disordered nervous force, probably the result of the close relation between the splanchnic ganglia and the vaso-motor centre.

Nor is "gout" in the human subject regarded by the best authorities as the result of an excess of albuminous food, but rather of carbonaceous or fatty food and the use of wines and ales, with little exercise, which gives rise to an excess of

lithic acid and a deposit of lithate or urate of soda in the fibrous tissues of the body, especially about the joints. It used to be considered a disease of the rich, but is now pretty common among the working classes.

It is a very rare thing to find a case of gout among the farm labourers in the north of Scotland, but it is quite common among the same class in this district; and the reason is obvious. In this district the food of the labourer is principally composed of fat pork and beer, with fat puddings and dumplings that would make a Scottish labourer stand aghast, while the food of the latter is chiefly composed of oatmeal and milk, a far more albuminous diet than that of his English compeer.

So we see that the diseased conditions cited by Mr. Gresswell to show that a superabundance of "nitrogenous or albuminous elements in the blood give rise to inflammation" completely break down. Moreover, the effete nitrogenous elements of the body leave it in the shape of urea only by the kidneys, and if it were the cause of "nephritis" we should frequently meet with such a disease; and if from any cause they do take on diseased action, so that the urea is not separated from the blood, I still maintain that the "phenomena is very different than those of inflammation."

Regarding the action of *antimony* and *digitalis*, I have only to reiterate my former statements, for they are borne out by experimental facts, made by experts of the highest scientific attainments, and confirmed by practice. I have no doubt but that a great many practitioners use them, but the only or the principal effects they produce are the effects on the minds of those who administer them.

The fact that Mr. Gresswell extols their use, and that of bloodletting in inflammatory complaints, is the best proof that he is himself a victim of that fell tyrant that it is the object of his papers to decry and destroy. I had almost thought they were dead and buried until the appearance of his papers, at least by all practitioners of recent years. Even in the medical profession, in this country at least, the treatment of pneumonia by bloodletting and tartar emetic is abandoned. It is now nearly a quarter of a century since *Dietl*, of Vienna, proved on a large scale the inefficacy, or rather injurious character, of the treatment of pneumonia by that means. In his large hospital at Vienna he showed that of 100 such cases treated by bleeding 23 died, that almost precisely the same mortality attended the *tartar emetic* treatment, while less than 8 per cent. died of those merely confined to bed and supplied with some saline or cooling drinks. It would seem to linger still about Italy and Italian doctors, who subject their

statesmen, like Cavour, and even their king, to such spoliative remedies. In the case of the king they seem to have combined the two methods of bleeding and tartar emetic, as if they thought that two bads would make a good, and the world knows and regrets the result.

From this we learn that the medical profession on the Continent—from which we are always hearing of great advances in pathology—have not thrown off the trammels and fashions of a bygone and barbarous age. Had it been to write down such a fashion that Mr. Gresswell had taken up his pen, we could have understood and even sympathised with him. But when he tries to drag us back to antediluvian fashions, by reviving such theories and practices, and hugging them as long-lost treasures, I could scarcely resist the temptation of trying, if possible, to "*undeceive*" him, seeing that he wishes for it, and "*believes so firmly in their efficacy.*"

In conclusion, I have to thank you for the opportunity afforded of airing these pathological ideas.

I have no selfish or sinister motives to gratify; my object has been the advancement of our common profession and the attainment of truth. If the structure I have tried to raise be baseless it will be the more easy toppled over, and nothing will give me more pleasure than to see it in ruins, provided that a better can be put in its place.

[An addendum was attached to this communication, which had special reference to the remarks we made in our last number on Mr. Gerrard's accusation of our having conducted the *Veterinarian* in a spirit of illiberality. Had the addendum not borne such marked evidences of hostility we should most readily have given insertion to it; but, besides this, many of the assertions were so intemperate, and so far wide of the point at issue that, out of consideration for Mr. Gerrard himself, and the reputation he has attained as a member of the profession, we have seen right to withhold the addendum from publication.—Eds].

LAMENESS FROM BAD SHOEING, A CASE OF SUPPOSED PARALYSIS IN A HORSE.

By Samuel Gill, M.R.C.V.S., Hastings.

November 9th.—A telegram was was sent to my residence, from the Rev. ———, of Parkgate House, for me to go immediately, a distance of ten miles, to see his horse, which he

thought was paralysed. On my arrival the animal was found to be lying down and groaning from excessive pain. I had great difficulty to get him into a standing position, but after a little perseverance I succeeded in this, and having made a careful examination, I informed my client that it was not a case of paralysis, but that the disease was located in the fore feet; indeed, it was impossible to lift either of the legs without throwing the horse down. Directions were given for the patient to be placed on a mash diet, and fomentations and poultices to be applied to the feet.

Early the next morning I paid another visit. The horse was standing up and able to move in his box, which he was unable to do before. The village smith was sent for, and the two fore shoes were removed. The horse was then walked out of his box without them; this he did readily, thus distinctly showing the cause of the excessive lameness. The shoes were very badly made and caused great and uneven pressure around the foot, particularly at the heels; the nails were also driven very high up, and evidently too close to the sensitive parts of the foot, thus causing intense pain and lameness. I complained to the smith of the way the horse was shod. He said it was not his fault. "I did what my master told me."

November 20th.—I secured the services of a smith residing here, who is a good workman, to go and tack the old shoes on, and to have the horse sent over to this town the following morning to the forge. This was done, and I gave directions for him to be shod with good plain shoes set wide, and having sufficient cover, also for a ring of leather to be interposed between the shoe and the crust, so as to break any jar to the feet.

23rd.—I made my last visit, when the groom said, in reply to my inquiry, "He goes well in these shoes, sir, and he came home well too."

QUACKERY.

By Parlane Walker, M.R.C.V.S., Halifax.

I am obliged to Mr. Watson for his notice of my paper on quackery in the February issue of the *Veterinarian*. But Mr. Watson says he cannot quite coincide with my arguments, and proceeds to notice certain points, first finding fault with my statement "that a man has a perfect right to

utilise his knowledge, and pursue what course he considers best for his own interest." Now, it is to be observed that the remark is made in my paper, as the context shows, in dealing with the quack as an independent individual, and in conjunction with his inability or otherwise to avail himself of the college training, and to show *my* indifference to him and his power as a quack.

Of course, if the quack is blind enough to consider it to his own interest not to qualify himself, who is to gainsay him? It is only so much the worse for the quack.

Mr. Watson does not surely think that I would apply the same rule to my professional brethren; indeed, the whole paper is a protest against this idea, which, alas! is only too prevalent in the profession. The moment a man qualifies himself at the college he assumes certain obligations and responsibilities, expressed or implied, and amongst the latter is one to consider the interests of the profession. Now, the conduct of some clearly indicates that these interests are not such as a selfish man would consider, or what mean the deliberations between the "Licentiate" and the "Charlatan," if it be not one of self-interest, as opposed to the interest of the profession? Absurd and ridiculous as Mr. Watson considers such deliberations, I can assure him it is a common practice in this district. I have been five and a half years here, and have had ample opportunity of consulting with quacks; and, had I considered my own immediate interest, I should have complied, but I have always declined, as will be judged from the tenor of my paper. What will Mr. Watson think when he is told that it is a common practice here for "Licentiates" (*Fellows*, too!) to consult with "Charlatans"?

Mr. Watson says let us have the power of suppressing imposition. Well, where is the power too come from, except it is taken in hand by the profession as a body? Here is an imposition; who will handle it? It's all very well to talk about putting these quack parasites down as much by individual effort as by united force, but what chance has the former, when quackery is supported by honourable (?) and eminent (?) members of our profession!

If Mr. Watson, or any one else, would like names, chapter, and verse, they can have them; indeed, I think they ought to be demanded by some authority. As far as my individual effort goes, it is war to the knife, more especially with the quack of quacks.

Speaking on my remarks on the sister profession, Mr. Watson says that he fails also to perceive the lesson. But here again I think he is wrong, as a further perusal of my

paper will show him that I was speaking about a quack assuming the title of veterinary surgeon. Let a quack invade the sister profession, and call himself surgeon and visit the sick, he will soon find out what the nature of the united front is. It is not the quack that advertises his nostrums under his own name without professional title that is calculated to do harm; the public have their eyes open, and are not deceived, or think they are purchasing something they are not. It is the unchallenged assumption of the practitioner, unblushingly declaring himself veterinary surgeon, which does the mischief. The time will come when it will be put a stop to, and I think it is a scandal upon the profession for a young man to be cast adrift, after having fought for and obtained a creditable distinction, to combat alone the insidious influences that the system exposed him to. I can quite imagine a young man not long left college, struggling for a position, having absolutely to fall into the hands of a quack for an existence. This should not be, and I do trust that Mr. Watson will put his shoulder to the wheel to alter this state of things. Further, as to homœopathy, probably there is a modicum of truth in it; but what I condemn is the absurd practice of members of our profession practising both systems at the will of the client. What must be thought of the consistency of such a man? We need not go seeking for facts, therefore, before condemnation; in the eyes of common sense the fact of such practice is its own condemnation. If a man is a homœopathist, he can have no faith in the allopathic treatment, and *vice versa*. I have followed Mr. Watson as well as I have time at present through his somewhat wandering remarks; much more might he said, but the two chief difficulties to be met with in promoting the respectability of our noble profession are those most particularly referred to herein. Mr. Watson seems to lose the precise issue of every point he has attempted to notice. Will he be kind enough, as already asked, to exercise his influence upon the profession as a body to apply the words he takes (with questionable taste, however,) from St. Paul? Further, what are the "enlightenments," "aspirations," "prejudices," "judgments," and "experiences" of our time is a question I would have been glad if Mr. Watson would have thrown some light upon. And is the present state of things in our profession calculated to put us to the fore as representatives of the country's "intelligence" and "humanity," or to separate us from its "sectional" or "party" feelings, still less from its "quackery," its "delusions," and its "cant"?

Mr. Watson, in the commencement of his letter, speaks of my giving the quack a complimentary clap on the back, and wonders why I do not exercise the same charity towards "all *sections*" of my professional brethren. I should like to know what *section* of his professional brethren he places the quack in.

Mr. Watson speaks of another species of quackery which I have not mentioned, viz. non-professional men conducting branch practices under the name and title of the principal. In my paper I only speak from my personal observations, and have only simply to say that I was entirely ignorant that such a professional curse existed, and I think it behoves Mr. Watson, and all members who love their profession, to open their mouths and hold up to professional obloquy those members who would stoop to such base flagrancy.

In conclusion, surely the time has arrived when we should have some protection, both against the quack assuming the title of veterinary surgeon and against the licentiate who brings discredit upon he profession in such glaring colours. What but protection is the order of the day, both in the medical and legal professions, and even in the industries of our country? And is the spirit of our body corporate, at such a low ebb as to leave it stranded, to be shot at by all the leeches in the country in and out of the profession? I believe our own favoured country is the only one which does not extend its protection to the veterinary profession.

LARVÆ LOCATED IN THE VAGINA OF A COW.

By William Awde, M.R.C.V.S., Winstone, Darlington.

I was called out on Sunday afternoon, September 30th, 1877, about 3 p.m., to see a heifer belonging to Mr. Hutchinson, of West Middleton. On inquiry I found that she had calved her first calf in the field on the Wednesday previous (26th), the period of utero-gestation not having fully expired. The fœtal membranes had not come away. The owner found her going off her food and milk on the Saturday and Sunday morning, and thought he had better seek advice.

Symptoms.—Animal dull and listless; continual moving of the tail; respiration not much affected; mouth hot; extremities rather colder than natural. Internal temperature

103° F. The labia looked rather swollen, and seemed very tender when the tail was moved.

Diagnosis.—Metritis or inflammation of the womb.

Treatment.—I left Magnes. Sulph. ℥xiij, Zingib. ℥j, and Opii Turc. Pulv. ℥j.

October 2nd, 6 p.m.—Animal much about the same, but in addition to the previous symptoms she was observed to turn her head to her tail, as though she wished to lick it.

I then determined to explore the vagina, and on passing the hand I found, about three inches from the labia, the mucous membrane on both sides very rough to the feel. I withdrew my hand, and imagine my surprise to find three or four larvæ, maggots, adhering to it. I washed the vagina well with warm water and removed at least seventy maggots, they having eaten their way deeply in some places into the muscular structure below the mucous membrane. The mucous membrane, so far as I could see, was in a state of inflammation, and presented a very rough appearance. The animal seemed to be in great pain, particularly when the tail was moved or the parts manipulated in washing, &c.

The larvæ measured from a quarter to three eighths of an inch in length; they were broad at one extremity and pointed at the other.

I left febrifuge medicine, and had the parts well dressed with Plumbi Acet. et Zinci Sulph.

4th.—Animal improving in health, beginning to eat her food, and looking livelier. On examination I found no more maggots.

Still continued febrifuge medicine and also injections to vagina.

11th.—Animal quickly approaching a normal state of health. The fœtal membranes were still protruding from the vagina about twelve inches.

I left Magnes. Sulph. ℥viij, with plenty of aromatics, with a view to assist the expulsion of the fœtal membranes. I have since heard from the owner that the animal is all right and doing well.

Pathological Contributions.

CATTLE PLAGUE.

The latest report from St. Petersburg announces that cattle plague exists in the following governmental departments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, Bessarabia, Podolia, St. Petersburg, Taurida, and Kherson.

Cattle plague continues to exist in many parts of Hungary, and has also appeared in some fresh districts of Southern and Eastern Hungary.

It still prevails in the district of Jassy, but has ceased to exist in the district of Dorohoiŭ, no case having occurred since 5th January. The total number of animals attacked has been 248, of which 19 died, and 229 were shot. The last report we have received states that the disease has very much diminished in the district of Jassy; and that up to 13th December 1985 animals had been attacked, of which 1096 had been shot, 397 died, 401 recovered, and 91 still remained ill.

It is reported that cattle plague has reappeared at Gallipoli, besides which a fatal epizoötic has shown itself at Ipsala, near the capital, among sheep and oxen.

A further communication reports not only the reappearance of cattle plague at Gallipoli, but that it has appeared at Enos, Kessan, and Ipsala.

From Galatz it is reported that the cattle plague exists in the district of Foeshani.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of January, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Antwerp . .	London . . .	Foot-and-Mouth	...	14	...	...	14	Slaughtered under the instructions of the Privy Council.	...	966	...	...	966	Slaughtered under the instructions of the Privy Council.
,, . .	,, . . .	Sheep-scab . .	...	14	...	...	14	Ditto	...	425	...	...	425	Ditto
Boulogne . .	,, . . .	Foot-and-Mouth	2	...	...	...	2	Ditto	17	...	...	...	17	Ditto
Hamburg . .	,, . . .	,,	...	6	...	...	6	Ditto	...	1240	...	...	1240	Ditto
Rotterdam . .	,, . . .	,,	...	3	...	...	3	Ditto	135	376	...	3	514	Ditto
Total Diseased Animals .		Foot-and-mouth	2	23	...	...	25	Total Healthy Animals .	152	3007	...	3	3162	
		Sheep-scab . .	...	14	...	...	14							
		Total . .	2	37	...	...	39							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of January, 1878.

Veterinary Department, Privy Council Office,
Feb. 11th, 1878.

PLEURO-PNEUMONIA.

From the reports which have been received it appears that pleuro-pneumonia existed during January in the following counties of England and Scotland :

Cambridge, Cumberland, Derby, Essex, Hertford, Huntingdon, Kent, Lancaster, Leicester, Lincoln (*Holland, Kesteven*, and *Lindsey*); Middlesex, Norfolk, Northampton, Northumberland, Notts, Stafford, Suffolk, Surrey, Sussex, York, North Riding and West Riding; Isle of Ely, the Metropolis, Merioneth, Aberdeen, Banff, Clackmannan, Dumbarton, Edinburgh, Fife, Forfar, Kincardine, Lanark, Linlithgow, Perth, Renfrew, Roxburgh, Stirling.

The following cases of pleuro-pneumonia have been registered in the Netherlands, from 30th December, 1877, to 26th January, 1878 :

In South Holland . .	38	cases in	14	communes.
In North Holland . .	9	„	4	„
In Friesland . . .	16	„	5	„
Total,	63	„	23	„

FOOT-AND-MOUTH DISEASE.

Foot-and-Mouth disease was reported to have existed in the following counties during January :

Cambridge, Chester, Cumberland, Durham, Hertford, Huntingdon, Kent, Lancaster, Norfolk, Northampton, Northumberland, Salop, Somerset, Warwick, Worcester, York, North and West Ridings, and the Metropolis.

Facts and Observations.

Entozoa.—Judging from the contents of several communications received by Dr. Cobbold, we fear that a considerable number of colts are being lost this season from epizoötic outbreaks, due to the four-spined strongyle, *Strongylus Tetracanthus*. On this subject letters have been received from Mr. G. R. H. Wilkins, Mr. Henry Webb, and other veterinary surgeons.

Mr. Storrar, Mr. Avis, Mr. South, and others, are thanked for their recent contributions to the College Museum.—Eds.

THE VETERINARIAN, MARCH 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE CONTAGIOUS DISEASES (ANIMALS) BILL.

IT will be seen by our report of Parliamentary Intelligence that the Lord President introduced a Bill on the Contagious Diseases of Animals to the House of Lords on Tuesday, February 12th. Our readers will be interested in a short statement of the scope of the measure, so far as it relates to the spreading of contagious diseases of animals in this country.

That part of the Bill which relates to foreign animals requires no explanation, as its whole purport is contained in a single line of the fourth schedule—"They are not to be moved alive out of the wharf," meaning the place where they are landed, so that all foreign cattle, sheep, and swine, are to be slaughtered at the landing place.

Provisions are made for quarantine of animals for store purposes. These animals are to be landed at certain stations and detained for a period not less than fourteen days; then they are to be passed to their destination by a certificate or licence of an inspector of the Privy Council, and they are not to be removed out of the district into which they are sent for fifty-six days—not in or about the district during that time—without the licence of the local authorities. The Privy Council has power to exempt from the provision relating to slaughter or quarantine animals from the Channel Islands and the Isle of Man, and also to modify the regulation in respect of animals intended for breeding or for exhibition. Power is also taken to prohibit importation of animals on account of cattle plague; but there is no prohibition of any kind of foreign animals in the Bill.

In reference to the mode of dealing with contagious diseases in this country large powers are taken for the purposes of extending the definition of "animal," and also of "dis-

ease," so that any animal and any disease may be included in an order in Council.

Clause 37 provides for the appointment of inspectors and other officers by the local authorities, and enacts that "every local authority shall keep appointed at all times at least one veterinary inspector;" and turning to the definition we find the following—"Veterinary," used with "inspector," means a member of the Royal College of Veterinary Surgeons.

The only diseases which are dealt with in the Bill are cattle plague, pleuro-pneumonia, and foot-and-mouth disease, presumably because those were the diseases which were made the subjects of special recommendations by the Select Committee of the House of Commons. Cattle plague is to be dealt with by the Privy Council. Animals affected with cattle plague, and those in contact with them, are to be slaughtered, and the Privy Council may order the slaughter of suspected animals, and of all animals in an infected district. This last power is subject to such regulations as the Treasury may deem fit to make.

Compensation for animals slaughtered is to be paid out of money provided by Parliament.

Pleuro-pneumonia and foot-and-mouth disease are to be dealt with by the local authority, and compensation, as at present, is to be paid out of local funds.

All cattle affected with pleuro-pneumonia are to be slaughtered, and the local authority may cause any cattle which have been in contact with cattle affected with pleuro-pneumonia to be slaughtered; this is an extension of the present powers of local authorities. The most important regulations respecting pleuro-pneumonia and foot-and-mouth disease are contained in the third schedule, which prohibits the movement of cattle in the case of pleuro-pneumonia, and of animals in the case of foot-and-mouth disease, into or out of a place infected with either disease, except by order of the Privy Council, and on conditions prescribed by order of Council. Movement in, into, and out of, an infected district (round an infected place) can take place only by licence of the local authority on conditions prescribed by order of Council.

No market, fair, exhibition, or sale of animals can be held in an infected district except by licence of the Privy Council.

We have only to add that the Bill repeals ten Acts which are now in force in the United Kingdom relating to the contagious diseases of animals.

Extracts from British and Foreign Journals

COMPARATIVE PATHOLOGY AND MEDICINE.

As a knowledge of comparative anatomy and physiology is essential to enable us to understand the structure and mechanism of man, so it is necessary for us to carry our researches into the diseases of animals and plants before we can unravel the complex phenomena of disease in the more highly evolved human being. And as much of our exact knowledge of the phenomena of healthy life, or physiology, has been obtained by observation and experiment upon the lower animals, true scientific pathology—or a knowledge of the phenomena of disease—must be based upon the study of diseases and morbid processes occurring in other animals besides man. It is a recognition of this fact that has led to the proposed establishment of a Chair of General and Comparative Pathology at Oxford—a university which has been foremost in promoting the science of biology. There are many reasons why animal pathology and medicine should precede or accompany the study of human medicine. Living under more simple conditions—conditions more nearly approaching those of nature—the transition from a state of health to a state of disease is more easily traced, and diseased processes are more simple in the lower animals than in man. The student of animal pathology and medicine is able to command the circumstances of disease to an extent quite unparalleled in the case of man. Both the individual and his environment are in a great measure under the control of the observer, and by varying the conditions of life he is able to modify the course and progress of disease. There is thus afforded him an opportunity of calling into play, of varying, or of removing, the conditions which appear to induce dis-

ease, and thus to determine the essential factors of morbid processes. In the human subject one of our greatest difficulties is that conditions cannot be repeated or varied at will, and thus arises the uncertainty which hedges in the study of medicine, however indefatigable and sincere may be the student. Again, in the lower animals morbid processes can be studied in all stages of their progress, for the victim of disease can at any moment be destroyed. In this way essential and early changes can be differentiated from those which are secondary and mere complications. It is the privilege of our office to prolong human life to its utmost limit, and hence we are unable to employ the scalpel and the microscope, or the test-tube to the dead body, till such time as the original morbid processes have become greatly obscured, if not completely effaced. Such knowledge is necessarily one-sided; for by studies prosecuted on the dead, we are often unable to discover the subtle and delicate point on which is suspended the beam oscillating between recovery and death. It is in the domain of preventive medicine, however, that we have most to expect from veterinary medicine. Here the scientist is not only able to indicate the measures necessary for the suppression of disease, but can get legislative authority for enforcing them. From knowledge gained in this department we shall be able to apply the remedies necessary for the prevention of human diseases.

Many of the grandest achievements in physiology, pathology, and therapeutics, have been gained in the sphere of the veterinary physician by students and practitioners of human medicine. The more advanced position of human medical science explained this anomaly in former times. But now veterinary medicine has developed from the empirical to the scientific stage, and the veterinary profession will be expected to contribute more and more to the knowledge of our science and art. The training of the veterinary practitioner is daily becoming more comprehensive and more careful, and the fruits of this are seen in the rapid advances of veterinary science and in the culture of those engaged in veterinary medicine and surgery. Veterinary literature has made enormous progress during the last few years, and the most brilliant future may be predicted for it. Now that veterinary medicine is established on a scientific basis, the time has come when the bonds which unite the students and practitioners of human and veterinary medicine should be knit more closely, and the two branches be brought into more intimate relationship. Human and veterinary medicine are progressing along the path of knowledge, but they are sepa-

rated from one another. Fellow-travellers along the steep and rugged course, they should advance hand-in-hand, helping each other to surmount the obstacles they will have to encounter on the way. Each has much to learn of the other. Whilst the objective side is sometimes studied to the greatest advantage in animals, the subjective can be investigated in man alone. It is, therefore, no less necessary for the veterinary physician to have a knowledge of disease in man, than it is advantageous for the practitioner of human medicine to study diseased processes in the lower animals.

It has for some time past seemed to us that a medical journal has great opportunities in bringing about a closer union between these two branches of medicine. In its pages each could learn the daily progress of the other, and the knowledge gained in each department could be integrated to the common stock. With this object in view we have issued a circular to the veterinary profession informing them that we intend devoting a certain space in our columns to comparative pathology and medicine, and inviting their co-operation. We purpose in this new department to furnish original communications, special articles and reports, editorial remarks, abstracts and extracts from British and foreign veterinary writings, reviews of veterinary literature, and news of interest or instruction. We have no intention of trespassing on the ground so well covered by existing veterinaay publications, but aim rather at enlarging the area of medical literature by affording a new channel wherein the two streams may flow. In order that our department may be successful, we appeal to the active assistance and sympathy of our brethren in both branches of our common science. We are sure that each will be a gainer by extending his inquiries into the domain of the other. We therefore invite all who are interested in the progress of medicine to help us with material likely to advance the study of Comparative Pathology and Medicine.—*Medical Examiner.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Veterinary Report.

Hon. W. Egerton, M.P. (chairman), reported that he had been elected chairman for the current year. Mr. Harpley had presented to the committee a report of the examiners at the recent examination of students from the Royal Veterinary College, in which it was stated that originally there were seven candidates, but three failed to come up on account of impaired health. The report showed that the technical part of the examination was not so satisfactory as could be wished. A letter had also been read from the President of the Royal College of Veterinary Surgeons, drawing special attention to the above, and expressing his opinion that the term or period of study was formerly too short, but that this is now remedied. The committee recommended that a copy of the report and letter be sent to the Governors of the Royal Veterinary College. Dr. Burdon Sanderson had recommended that the cattle hitherto experimented upon for pleuro-pneumonia be kept for other experiments, and that fresh ones be procured for further experiments in pleuro-pneumonia; that it is desirable that the improved method of inoculation for pleuro-pneumonia should, with reference to its preventive efficacy, be tried on a larger scale than had hitherto been possible in districts in which disease actually prevailed, and that with this view owners of stock should be requested to co-operate with the committee by allowing their uninfected animals to be inoculated, it being understood that compensation would be made by the Society for any losses arising directly from the inoculation.

The report was adopted.

Stock Prizes.

Mr. Booth reported that Mr. Milward had been elected chairman for the year 1878. The Committee and the Veterinary Inspectors had considered the question of the dentition of pigs, and they recommended that no alteration be made in the existing rules.

This report was adopted.

A letter was read from Mr. James Forrester respecting the calculation of the ages of animals entered for exhibition, and the Council decided not to alter their present practice as regards this subject.

Metropolitan Show Sites.

Professor Simonds (chairman) reported that the Committee had inspected two sites available for the show-yard next year, in the neighbourhood of Kilburn, and were in correspondence with the tenants. They had also communicated with the London and North Western Railway Company, who were willing to provide the

necessary accommodation for the arrival and departure of stock, implements, and passengers. The Lord Mayor had consented to preside at a public meeting, to be held at the Mansion House on Wednesday, March 13th, at 3 o'clock, to promote the holding of the Society's meeting in London next year. The Committee recommended that the Council, at its rising, adjourn until March 13th at noon, to enable members of Council to attend the Mansion House meeting, and in consequence of March 6th being Ash Wednesday.

This report was adopted.

CENTRAL VETERINARY MEDICAL SOCIETY.

At a meeting of the above Society held at 10, Red Lion Square, January 17th, at 7 p.m., the President in the chair, *Mr. Roalfe Cox* brought forward an assortment of nails, buttons, and pieces of small iron ware, found in the colon of a horse. There was no evidence afforded of their presence other than a perverted appetite and non-mastication of the food, oats especially. He also directed attention to the use of terebine as a dressing for wounds. *Mr. J. H. Steel* then read an interesting paper on the "Prevention and Cure of Rabies." After which, in the discussion, *Mr. Fleming* expressed the pleasure he felt at the subject being introduced, as it had enlisted so much attention at the present time; and went to show the value of veterinary science and its influence on sanitary legislation. Legislative measures must depend on the public knowledge of the disease to be suppressed. There was much matter to debate on, especially the spontaneous generation theory, where even the highest authorities were not agreed, and legislation must be imperfect while such belief prevailed. He did not see the possibility of rigid isolation for the period of seven months. Those who dealt with the isolation of larger animals would admit the difficulty of their seclusion, and in the case of the dog, who abounded everywhere, it would be more so. Then the period, although a long one, was likely to be useless, as the time of incubation was sometimes twelve months. The experience on the continent was in favour of a high tax. He considered the present tax too low, and that a shepherd's dog being useful was worth paying for; with dogs kept merely for pleasure it was a luxury the owner could afford to pay for even at a higher rate. The spontaneous theory was untenable from the fact of immunity of certain countries. In muzzling he had no faith as a preventive. The treatment was a serious question, every form having failed; the supposed curative, curare was a dangerous one, requiring the greatest watchfulness, and if given for any length of time, almost certain of producing death. It was ascertained that the lesions of the central nerves were so

great and marked that it was questionable if restorative function could be produced. Bitten animals had been salivated with mercury without success. On the question of no remedy being possible and the humanity of taking the life of the hydrophobic subject, he was astonished that it was advocated. He doubted not that eventually remedies would be found for all diseases, and that efforts at finding a cure would be made till successful. He feared the virus was not always localised, as they had been told, for in the case of a cow bitten on the tail, and there only, which was shortly after amputated, it did not save the animal's life. That there were many obscure points he admitted, but he knew of no instance where with well-marked symptom recovery had ensued. He thought the veterinary profession had it in their power to do an immense amount towards dispelling ignorance and increasing the public knowledge of the malady. He was not aware suction had produced harm, but he knew it cleaned wounds without danger to the operator, and would not hesitate to resort to it for himself or another; he regretted the idea was promulgated as it lessened the victim's chance of recovery. Caustics were not as a rule accesible, but he had great faith in the actual cautery, because of its ease of obtainment, and while heating the iron suction could still be maintained. Excision was more difficult and painful and liable to retaint the wound more than iron at a white heat. *Mr. Roalfe Cox* said, it being agreed advisable to destroy the parts in immediate contiguity to the wound, and bearing in mind the tortuous direction of the teeth in inflicting it, and lunar caustic being difficult to introduce, it occurred to him that a pipette filled with fluid and introduced into the wound would be more likely to ramify over the surface. *Mr. Hunting* said that prevention was really the most important point, but it must be undertaken upon the belief that the disease spreads by contagion, for they could make no provision for the spontaneous origin. It was a remarkable fact that rabies often followed some social convulsion; on the continent of Europe rabies was of constant occurrence, and was reintroduced here by persons returning with their pet dogs from a country where it spread easier as there was no sea boundary. The suggestion as to recording the premonitory symptom on the dog's collar he commended, as it would call attention to the need of noticing peculiar changes in the dog, which would be valuable, and from the alarm now general nearly every one to read them. Muzzles he did not agree with, for there were now many muzzles and different ways of fixing them. He believed in the law enforcing the use of a collar with name and address, its absence to indicate a stray dog or an escaped one. Rabies was a progressive disease and not an evanescent one; from its appearance till death there was no intermission; supposing there were, it would afford a loophole for the disease to escape notice under the best regulated measures. Often in four days, as a maximum, the dog was dead, so a few days' detention afforded a reliable means of diagnosis.

On the question of bite there was no need for special enactments, for the common law provides for civil damages and from injury by a savage dog, if you prove the owner's knowledge.

The further discussion was then adjourned owing to the lateness of the hour.

Professor Pritchard was declared duly elected, and the meeting adjourned.

Present, nineteen Fellows and five visitors.

At a meeting held Thursday, February 7th, at 7 p.m., Mr. South in the chair, the adjourned discussion on rabies was further postponed, owing to the unavoidable absence of several Fellows interested in the subject. *Mr. Steel* exhibited a tumour taken from a horse in a knacker's yard. It had been sent to him, and was removed from the superior part of the neck just below the larynx; he believed it to be an enlargement of the thyroid body, a type of goitre in the human subject. The history was meagre; the animal was a cart mare, and in last owner's possession four or five years, during which time she carried it about, there being little or no increase of size during the period; it weighed 1 lb. 14 ozs. He believed it was colloid in nature. Externally it was covered with a thin transparent coat, the under structure somewhat lobulated and very firm, and well organised. On section it was yellowish, and contained spaces of various sizes, containing a serous fluid and blood-corpuscles and cells larger than usual, with a granular surface. The spaces also held an amount of amber-coloured fluid of a gelatinous character, which, when further examined, showed colloid cells. The mare was destroyed for lymphangitis of one of the hind extremities, which often disabled her for work. It was an unusual affection in the horse.

In answer to inquiry, he said that he did not know the colour of the mare. The letter he had received with the specimen stated there were no large vessels in connection with it, still they would see the veins on examination. *The Chairman* held it was more a fatty fibrous tumour than glandular. *The Secretary* (Mr. J. Rowe) said that if they had seen it in the living animal they might have been puzzled as to its nature, and have believed it to be the thyroid gland simply from its locality. He had under his care a pug dog, which, when submitted to him, presented every appearance of a similar enlargement. The owner supposed it was a tumour; he thought it an abnormal increase of the gland, and had decided to remove it, thinking there would be no difficulty, the skin being pendulous; but by some unknown cause what had been no more than an eyesore became scratched during the night of admission, and in the morning was greatly swollen, so that ultimately an abscess formed, into which he had to make a lengthy opening. The case was now doing well. He might also refer to another case, also in a pug, which he saw some six weeks back; here the swelling was directly under the middle of the throat,

and was gradually implicating the muscles of the neck down the front. Owing to its peculiar position he doubted the expediency of a surgical operation, therefore he had treated it with iodine and returned the dog. *Mr. Shaw* had particularly noticed the disease in horses, and that grey horses were the subjects of such enlargements of the thyroid. *The Chairman* observed that in a case of a pony with a similar swelling (four years ago), but not so large, he considered it interfered with the animal's comfort and caused a continual cough; he decided to cast the animal and excise it, and did so, and the horse did well. The tumour contained a yellowish-brown fluid, but no solid material. Afterwards the cough was very slight; the pressure on the larynx by the tumour having been removed. He desired the opinion of the Fellows on a case he would relate. He had that day visited an establishment of thoroughbred horses. On arrival he found a mare giving birth to her foal prematurely; this was the fourth case within twenty-four hours. It was difficult to arrive at the cause, for the mares were well cared for and had good food; the stable management was everything that could be desired; exercise was afforded them, and they were taken up at night. The stables were well drained; the boxes were examined and cleaned at proper periods. Each mare ought to have foaled in another five or six weeks. The mare he saw was in difficult labour, the head of the foal being doubled back in the pelvis. He was able by taking advantage of the throes, which were very strong, to assist her and release the foal's head; the next difficulty lay in the fore-legs being back. He gave a stimulant, and in the course of an hour's stay effected with great force the readjustment of the fore-legs, when with an assistant's aid delivery was effected. The mare remained down for some half hour, then rose and ate as though nothing was the matter. He was anxious to ascertain the cause of this. Last year at two establishments they lost eighteen foals, but many of the mares went their full time, still the foals were dead. Further, two mares in foal while galloping about came into collision with one another, one injuring the shoulder so much as to be disabled for six weeks or more; he braced the leg up, and in three months she recovered. Fearing they would cast their foals before their time he kept them both quiet, but the result was a dead foal at the full time. The other mare also injured went eight days over her time, and was then observed to be restless and in pain, but it seems this attracted little attention; it was a dead foal. On examination he found the foal had had an attack, while *in utero*, of a determination of blood to the bowels, which were much thickened; a discharge of blood had doubtless caused the death of the foal. In one case the mare was sixteen years old. He thought it might be due to the inclement weather, and letting the mares out of warm boxes into the wet fields. In answer to question the *President* said they were not covered by the same horse. He had seen no offal lying about decomposing; no yew trees on the ground. *Mr. Hancock* said he was examining

a horse at a farmhouse the previous Saturday, the farmer keeping thirty-five cows, and his opinion was asked respecting the abortion of ten cows; they had received the same bull, and three months ago were in a field together, when one voided a calf, the others had followed one after the other; he thought this was due to mental impression. *The Chairman* did not accept this as an explanation of his case, for there was more isolation here. He stated that some of them were those that had aborted the previous year. He did not believe they had been frightened. *Mr. Daniel* remembered an instance of a review near a number of cows, where sixteen out of thirty aborted within a week after; and in a flock of ewes nearly all aborting after having had a pack of hounds dash in among them. *The Secretary* asked if there had been over-solicitation on the part of the owners or their attendants on their behalf, because he had frequently known bitches abort solely through the owners having timed their period, and almost the hour, then shutting themselves up with them, and if the parturient pains did not manifest themselves, scaring the poor animals by manipulation.

Mr. H. King Shaw then submitted:—1. Does inoculation for pleuro-pneumonia produce pleuro-pneumonia or any other disease? 2. If after inoculation certain animals are found to be affected with pleuro-pneumonia, are we to conclude it has resulted from the inoculation? 3. What time may be considered to elapse between the inoculation and inception or open identification of pleuro-pneumonia? 4. Can inoculation so weaken an animal as to render it liable to the disease, say after a period of some weeks? In his opinion it did not. He had seen a great many animals inoculated, and done a good number himself. There was often a loss of milk and loss of tails, but he had not seen a case of pleuro-pneumonia produced by it. *Mr. Hunting* said, from a sanitary point the questions were some of the most important that veterinary surgeons had to solve, for, with the exception of cattle plague, no disease of stock was of more importance, and if the questions could be answered positively, they could say certain regulations were not merely valuable but absolutely to be depended on for prevention and eventual eradication of the disease; on the other hand, that they were useless if the latter. Inoculation did not merely disfigure the animals, but it did grievous mischief by inducing a belief that the operators were carrying out sanitary measures, thus leading them to neglect more beneficial measures. He thought they might safely say that inoculation, although it never produces the local changes in the lungs called pleuro-pneumonia and known as a contagious disease, did produce inflammation of the pleura and lungs. It was remarkable how practical men of large experience differed with respect to inoculation, some believing in it affording entire immunity, others that the benefit, if any, was the loss of some tails. He cited a case where a man who had been nearly ruined by losses from the disease was prevailed upon by a publican, who had pre-

viously been a dairyman, to inoculate his stock, with the result that some lost their tails. A few died of pleuro-pneumonia; but the man had repeated it on every animal for the last three years without further loss. In reference to the second question, he thought not. Because by far the bulk of inoculations produced no change in the lungs, and when they found a well-established case accompanied by the lung changes, he thought they might say that the animal had received the seeds of disease prior to inoculation. Pleuro-pneumonia often did not show itself in a less period than seven weeks, so they could not say that the animal was exempt or might not have an attack till seven weeks after inoculation. As to its weakening the animal, that would depend on the condition of the lymph used; healthy lymph should not weaken the system, and if it did, it would render the animal equally liable to an attack of any other affection as readily as this. If it should once be proved that they could give an animal immunity from an attack by inoculation, then it followed that the Government of this country should make inoculation of cattle compulsory. *Mr. Mole* said in two cattle yards he knew the dairymen practised inoculation, and spoke most highly of the benefit accruing, one owner having lost but two animals, and he believed that had saved himself some thousands of pounds. Still, in the yard you would see cattle without tails, or only a portion remaining or not injured; the loss he ascribed as due to the putrid condition of the lymph setting up inflammatory action and the tail not having sufficient vitality to withstand it. It appeared that in the second yard referred to cattle plague appeared last year, and the whole stock was lost. *Mr. A. Broad* said he believed where inoculation had been performed it was still adhered to. He did not think it was so much a question of whether it caused disease or prevented it; he did not think it actually caused pneumonia, but it might set up some condition of the blood giving a less liability to the attack. *Mr. Shaw* inquired if Mr. Mole knew how the animals were operated upon. In reply, *Mr Mole* said by puncturing the tail, or by suture, or by a slit being made in the skin, and a piece of lung inserted, and the tail bound with tow. Being removed in a couple of days, the parts were washed and tincture of ammonia applied; the loss of tails was greater if the pieces of lung were large. *Mr. Shaw* had inoculated cows by passing a little bit of thread or silk (as a suture) saturated with lymph; this was attended with some swelling of the tail which had not gone far, but where a slit had been tried instead it had sloughed considerably. *Mr. Mole* said one of the owners he referred to did his own; the other did them after his plan, that being a suture made with a diamond-pointed saddler's needle.

The meeting was then adjourned. Present, twelve Fellows and one visitor.

James Rowe, Hon. Sec.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

The annual meeting and dinner in connection with this Society were held at the Queen's Hotel, Leeds, on Friday, January 25th, 1878—the President, Mr. Fallding, of Wakefield, in the chair. The following members were also present, viz.: Messrs. T. Greaves, J. S. Carter, James Freeman, Joseph Freeman, Peter Walker, John Cuthbert, J. W. Anderton, W. G. Schofield, D. Spilman, R. W. Murdoch, J. H. Ferguson, J. Atcherley, W. Lodge, J. E. Scriven, George Carter, J. M. Axe, and W. Broughton, the secretary. Messrs. W. A. Taylor, Manchester; Robertson, Leeds; and Hollins, Pontefract, were present as visitors. Apologies for non-attendance were received from Prof. Williams, Messrs. E. C. Dray, James Bale, John Freeman, M. E. Naylor, John Schofield, D. R. Sowerby, Charles Secker, J. L. Faulkner, Parlan Walker, and T. Pratt.

The minutes of the last meeting were read and confirmed.

The President delivered the inaugural address, in which he referred principally to the practical education of the veterinary student, the fees charged for examining horses as to soundness, and other matters of veterinary policy.

Mr. Greaves alluded to the late examination of students for the diploma, when a great many were rejected for want of practical information. He was quite sure that this deficiency could not be remedied unless the students obtained practical information before going to the veterinary school.

Mr. Anderton said that a person intending purchasing an expensive watch or piano would pay one or two guineas to obtain a practical opinion respecting the same, whereas a veterinary surgeon would give his opinion as to the soundness of a horse at the small charge of 10s. 6d. He thought that the examination fee ought to be one guinea.

Mr. James Freeman also thought that the fee 10s. 6d. was too little.

Mr. W. A. Taylor was quite sure that veterinary surgeons would not form themselves into a trade union; and he thought it impossible to obtain uniform fees.

Mr. Joseph Freeman related the fact of several sheep dying in one flock in a few days after being washed with Mr. Dougell's lotion. The symptoms were those of general fever, accompanied with diarrhœa. The only noteworthy appearance revealed in the *post-mortem* examination was the presence of large quantities of sand in the abomasum, the presence of which had not yet been satisfactorily accounted for.

Mr. George Carter related an outbreak of malignant anthracoid disease whereby a horse, a cow, and three or four pigs were all affected and died in a few hours after showing symptoms of the malady.

The next meeting of this society was fixed to take place in April, when Mr. Greaves' paper on "Germs" will be read and discussed.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The annual meeting and dinner of the above Association were held at the Blackfriars' Hotel, Manchester, on Tuesday, the 5th of February. Mr. Tedbar Hopkins, President, in the chair; there was a large attendance, the following gentlemen being present: Professor Williams, Professor Gamgee, Mr. Priestly, Owen's College, Manchester, and Dr. Makin, Manchester; Messrs. John Laurence, Alex. Dawson, Peter Taylor, Thomas Greaves, Thomas Taylor, E. Faulkner, W. A. Taylor, Manchester; Messrs. Elam Moore, R. Reynolds, Leather, jun., D. Hutcheon, James Makin, and W. W. Townson, Liverpool; Messrs. Cartwright and Hill, of Wolverhampton; G. H. Darnvell, Northwich; J. Hart and J. Bunnell, Oldham; W. Dane, Altrincham; P. Brooks, Pickington; W. G. Schofield, Pontefract; J. B. Taylor, Ashton, S. F. Fallding, and N. Beard, Macclesfield; C. Challinor, Pendlebury; James Rowe, London; A. Challinor, Bolton, and the Secretary.

Letters of apology were received from Professors Pritchard, McCall and Whalley, Messrs. Hennesy, M. J. Harpley, J. Gerard, Beyes, Howell, Woods, &c.

The President, on rising to deliver his inaugural address, was received with applause. He said—

Gentlemen,—At the commencement of another term of office, I cannot help being impressed with the thought that it would have been better for all concerned if I had followed the promptings of my own feelings and adhered to my resolve to answer in the negative your kind proposal that I should permit myself to be re-elected. However, labour in a good cause brings its own reward, and although lacking scholarly ability, and many other qualities that I would fain see the President of our Association possess, I try to console myself with the thought that if although small in degree, yet so far as in my power lies I have laboured honestly to advance my profession and our society. I may, without presumption, conclude that my brethren appreciate those labours, and have done me this honour in recognition of them. Publicly acknowledging your kindness and thanking you for the same, you will permit me to ask and will readily comply with my request for continued help and co-operation in the working of our Association, so that in passing from so memorable a year as 1877 has been to the veterinary profession, we may, while striving for fresh laurels, not forget to consolidate and give effect to the labours of the past. Old abuses and relics of past ages have some of them disappeared, whilst those that still cling to us must speedily give way if with the organisation we possess (and men at the head of our profession to whom we owe so much

already) are only ably, honestly, and perseveringly supported by the profession at large. Representing as we do a scientific body in one of the foremost nations of the world, with perhaps more just cause for its unbounded national pride than any other, let us, with the true spirit of Englishmen, not rest until we gain for our profession what is accorded to our country, the first position on the scroll of fame. Looking, then, at the great and important work which lies before us, with a will and energy that increase with the difficulties to be overcome, let us not remain satisfied with the little we have done, but remembering how far, how very far, we are from perfection, nay, even from being presentable, also that—

"The heights by great men reached and kept,
When not attained by sudden flight,
But they, while their companions slept,
Were toiling upwards in the night."

As the nations of the world merge from barbarisem and ascend in the scale of civilisation, the governing powers as a rule base their respective laws on the result of knowledge imparted by the body of the men who study each particular branch of science, excepting perhaps the one and that not one of the least important, viz. of medicine, the laws affecting which, in our country, are made first and the scientists consulted afterwards. Why this principle should have been in vogue is easily explained. With individuals as well as with the nation, the tendency has, until very recently, been a fixed and firmly rooted resolution to have nothing to do with doctors until compelled, and as a last resort. If you consult one of the faculty he will sometimes, for lack of patients, keep you in a state vacillating between life and death for a period, depending upon your ability to pay the bill. The lack of *skill* on the part of those practising medicine no doubt was the primary cause, as we trace from the savage herbalist to the barber with his skill in phlebotomy, the blacksmith with his fleams and oils; then the heroic practitioner of twenty years ago, until we find the practice of medicine now divided into branches, many of which will tax to the utmost the ability of our cleverest modern scientists, and after their lives are spent, still leave scope sufficient for the superabundant ability of any member of the coming race. The late Professor Stokes of Dublin, in one of his presidental addresses, expressed the thing exceedingly well. He said, "When medicine is in a position to command respect, be sure that its rewards will be proportionately increased and its status elevated. In the history of the human race three objects of man's solicitude will be indicated. First, that of divinity; next, that of law or government; and as man often seems to love gold more than life, the last is medicine. But with the progress of society, a juster balance will obtain conditionally that we work in the right direction, and make ourselves worthy to take a share in its government." Medicine is generally studied and practised with relation to the treatment of disease in man

and the lower animals, and whilst admitting the greater and higher claims of the life of man, yet animals are so essential to that life that the management and preservation of them becomes a necessity, and in Great Britain veterinary medicine is at length acknowledged science. Had *rinderpest* been a slow and insidious disease like pleuro-pneumonia, it is very probable we should have had it now fairly acclimatised and established in our midst. Good sometimes, however, appears to come out of evil; the rapidly spreading and fatal effects of the disease so startled the country that legislative interference was decided upon, and as the result of the importation of rinderpest, we have on our statute book the Contagious Diseases (Animals) Act of 1869. Let us briefly glance at our relation as a profession with the government of our country. It would only be natural to conclude that the body of men specially devoted to the study of this branch of medicine would be consulted in the framing, and called upon in the ordinary course of things to assist in the carrying out of these laws. Such, however, has not been the case, and as already hinted, it is as much the fault of the profession as the government, the members of the legislature came in contact at home with an old practical farrier or cow leech, or may be a *bonâ fide* veterinary surgeon, whose social status and intellectual ability were not of the order to inspire any one with the idea that he was a suitable individual to consult upon a natural question of such magnitude. The heads of the profession may not be to blame; but one is inclined to think if they had been more free from the universal apathy a better state of things might have been effected. Though ignored in a great measure by the legislature in the past, if our ranks become filled with men of undoubted ability and imbued with the right spirit, the public will find we are persons whose opinion and advice are worth asking, and that we are practising our profession not merely for the fees it brings but because we are devoted to it from a pure love of it; I say, when this is achieved, the country and the government will look to us for help and be guided by our advice. We must not forget the difficulty there is in legislating upon a question like this. The agriculturist, stockkeeper, and cattle importer are, as a rule, a law-abiding section of the community, and any law that interferes with the commercial freedom of the British subject wants not only care in framing, but great judgment in administering. The objects of the Acts at present in force are, *first*, to prevent, if possible, the landing on our shores of cattle affected with infectious diseases; *secondly*, detection and prevention of the spread of those diseases, and by the use of certain measures to try and stamp out those already established. The Privy Council who have the management of these Acts have so far acknowledged us as to appoint one of our professors its veterinary adviser. The inspectors at the various ports, with the power to compel the slaughtering or quarantine of affected animals, are now being selected from our ranks after an examination, although the Acts do not, so far as I can find, contain any clause as to

the qualification such men are to possess, and some little time back, to my knowledge, men were holding these posts who were not members of the veterinary profession. The detection and prevention of the spread of existing diseases is perhaps as difficult. We all know how formerly, and even yet occasionally, that directly a case of pleuro-pneumonia appeared in a herd, to prevent individual loss and get rid of the disease the unjust policy of selling all off and buying a fresh stock was resorted to, thus scattering infection broadcast over the country, each animal from the affected herd becoming a fresh source of danger. Besides the port inspection, each local authority under the direction of the Privy Council appoints an inspector for its own district. As a rule he is selected from the police force, butchering business, or other callings possessing similar qualifications. That these men are not the best fitted for the work any one who has come in contact with them in the discharge of their duty will readily admit. The injustice and hardships that many people have endured in consequenee of the investure of these incompetent men with power, may also be adduced as proof. Neither is the local general practitioner the best, for although people receive a proportionate compensation for the loss of their animals, they will, if possible, in many cases, try to sell them irrespective of any care as to how they spread a disease, so that the inspector should be free from any pecuniary obligation which the general practitioner is not when his own clients are concerned. The inspection of dead meat is in anything but a satisfactory state; large quantities of meat unfit for human food are disposed of weekly in the poorer districts of our towns. Even carcasses from which it would be impossible to cut a piece weighing 2lbs that would not reveal its real character, make minced meats, and supply a board kept ostensibly for the sale of scraps. The fact that the Queen, in Her speech at the opening of Parliament, stated that during the present session the laws relating to the diseases of cattle should be considered, shows that the matter is in anything but a satisfactory state, and I would take this opportunity of again bringing forward what has been for some time ably advocated by our esteemed friend Mr. G. Fleming, that we ought, like many of our Continental neighbours, to have a veterinary sanitary service for the inspection not only of living animals but of the food derived from them and the places in which it is prepared, not forgetting those sinks of abomination and cruelty, the knackers' yards.

A footnote in Fleming's *Veterinary Sanitary Science and Police* (a book, by the way, I hope will be studied by not a few members of the Privy Council and British House of Commons prior to their proceeding with further legislation), at page 557, vol. ii, says, "In Switzerland, Bavaria, in some parts of Germany and France (particularly at Bordeaux) and in Belgium (at Brussels especially) this veterinary organisation exists, and is of great public utility. It is very probable that in a few years it will be

established throughout the Continent. In this country, as has been mentioned, this important duty is generally entrusted to policemen, market clerks, and other such incompetent people.

The transmissibility of certain diseases from animals to man, such as rabies, trichinosis, measles and glanders, all of which are better understood by the veterinarian than any one else, points to him as the best fitted to detect their presence and save the country from their ravages. A better illustration of the little knowledge possessed by medical men of the diseases of animals could not be found than what is known as the Eagley milk-poisoning cases, in which between 100 and 200 people suffered from typhoid fever, 18 of whom died. These cases were attributed to lead poisoning from acid milk acting on the metal in the cans, until members of this association showed the absurdity of the thing and traced it to its real origin. Inspectors should be pathological anatomists and fair microscopists, knowing as we do the powerful forces at work invisible to the naked eye until their deadly work is wrought. It remains to be seen in the proposed changes of the law if all or any of the defects noted will be dealt with, and whether the Government will acknowledge us as an enlightened and true profession. Should they not, it will force us to the conclusion that our profession has not yet won for itself the position it is entitled to. Presuming this to be the case, there is nothing in it that need discourage, as time will ultimately place us in a position to which our ability and labours entitle us. Leaving this subject, let us look briefly at what lies before us. The legal protection of our rights is still a vision in the future. Living in a country renowned for its freedom does not imply that the liberty of a portion of its subjects shall be allowed to act to the prejudice and detriment of another and superior section of the community. It might be said there ought to be no need of protection; if the members of our profession are superior to the quacks the public will naturally look to us and discountenance the empiric. This holds good in a degree, but the extent of gullibility of the British public must be seen to be believed in. Take a somewhat parallel case:—Because the general public purchase a thing purporting to be genuine which an expert knows to be a fraud, is it not the duty of the powers that be, directly they ascertain the fact, to legally protect both the honest tradesman and the public from the imposition? We are already convinced not only of the justice of our plea, but fully persuaded that we could convince any other judge of the fairness of our claims; like many other desirable things, however, obstacles are in the way of their acquisition, in this case of such a nature that it is the unanimous opinion of our leaders that time will remove difficulties and opposition which it is not at present thought wise and desirable to interfere with. If our worthy president (Sir F. Fitzwygram) only identifies himself with the movement we could not have a better guarantee for prompt and effectual effect being made in due season to protect the public from imposition and the

profession from disgrace, wrought upon it by men assuming our titles, whose only right is their unbounded assurance and lack of shame. The preliminary examination of our students is not of the character to ensure intellectual ability equal to their scientific studies, and ought not to be long left in its present state.

It may be somewhat out of my province to speak now of the subjects calling for our consideration as an association, but the germ theory and the antiseptic treatment of wounds as advocated by Prof. Lister are subjects of sufficient importance to warrant me in asking the members to note carefully any practical facts bearing upon either of these and bring them before our notice in due season. Mr. Greaves' paper at Liverpool was exceedingly interesting, and a very fitting introduction to a subject of such magnitude.

My address, as I conclude it, convinces me of my deficiencies and lack of ability for such an important post; but if no great things are achieved, and spared to the end of the year, we may be enabled to say with Longfellow, that

"Standing on what too long we bore,
With shoulders bent and downcast eyes,
We may discern unseen before
A path to higher destinies.

"Nor deem the irrevocable past
As wholly wasted, wholly vain,
If rising on its wrecks at last
To something nobler we attain."

Mr. T. Greaves said that, although it was not the custom to discuss the inaugural address, still as the President had invited discussion, he (Mr. G.) felt disposed to say a few words on one subject, viz. that which was known as the Eagley milk-poisoning case. If he did so his remarks would tend to show that when a surgeon, although a highly educated one, slipped out of the limits of his own profession his opinion was found wrong, and would mislead those who listened to him. In respect to the Eagley milk-poisoning case, their friend Mr. Tom Taylor and he were requested by the chairman of the local board of that district to see the cow whose milk was said to be unfit for human food. The senior surgeon to the board had said that the poisoning had resulted from the milk given by one of the cows on a certain farm, and which cow had calved about six weeks before. They saw the cow, which was affected with a disease known as the "whites," and in which there was a discharge from the vulva. It was said this was an unsound beast, and gave milk of such a character as to affect the milk cans in which it was placed, and the consequence was that people were poisoned. At the farm they met the senior surgeon, his son (who was also a surgeon), and a clerk to the board. They examined the cattle, and found that the cow upon which the blame was laid was in a very healthy condition, excepting the slight discharge from the vulva; they considered the milk was not in a bad condition. The vulva was examined and there was scarcely any discharge to be noticed. They came to the con-

clusion that the milk was fit for human food. The surgeon had given an erroneous impression to the public. He (Mr. Greaves) offered to drink the milk, but the surgeon said—"Stop, I warn you, your life is in danger." He (Mr. G.) took a mouthful of the milk and spat it out again. The cowman said, "I take a pint every day." The veterinary surgeon attending the cow also took a pint each day to prove to the medical man that the milk from this cow, pure and simple, was not deleterious, and did not produce the disease in the district. He (Mr. G.) was satisfied that the surgeon, although a highly educated and nice gentleman, was entirely in error. We found several large tubs in the farmyard filled with water from a small running stream; we followed up the source of this water, and on the banks of the brook we found a quantity of refuse and excreta. Two or three days before the outbreak there had been heavy rain, and no doubt but that a quantity of this excrementitious matter had been washed into the water. We discovered that the water had been used in washing the milk cans, and it was very likely that some of the water was added to the milk. We were satisfied that the cause of the poisoning was in the water. We said to the surgeon it was not the milk from the cow that caused the disease, and as a proof we added—"If it is the milk from the cow, how was it that although the cow had been giving milk six weeks there had not been a poisoning case until a week ago?" The surgeon replied that the cow had never given any milk until then. Let them think of that assertion—a cow which had calved six weeks previously, and had not given any milk. He (Mr. G.) could not have believed a medical man could have said such a thing; but the surgeon persisted in his statement, and they called the milkman, who said the cow had given over six quarts a day every day since she calved. They told the surgeon that something had been added to the milk, but did not say what it was, but at the same time pointed to the water in the tubs; there was the poison, and if its connection with the farm was not stopped there would be further danger. We advised the chairman to stop the delivery of the milk, not because the milk was bad, but because there was something which had to do with it that was bad. The order was given and from that moment there was no other case of illness. There were numbers who had partaken of the milk who were ill, but no fresh cases occurred, and we believe, from the prompt action they gave, that instead of there being only eighteen or twenty fatal cases there might have been hundreds. If veterinary and human medical officers would keep their proper places it would, he was sure, be better for the community at large (applause).

Mr. A. Challinor—Was the cow under treatment?

Mr. Greaves—I rather think it was under the care of a veterinary surgeon at Bolton. The *Secretary*—Mr. Mollineux.

Professor Williams said he was very glad indeed to hear that the discovery of the true cause of the disease at Eagley was due to the ability and observation of members of this association.

He read the papers very carefully when the outbreak occurred in this neighbourhood, but he must confess he had never yet discovered that the veterinary profession received any recognition for the discovery (hear, hear). He was under the impression that the discovery had been made by medical men and that the veterinary profession had not been consulted in the matter. It showed that although a surgeon might not know that a cow gave milk shortly after it calved, and that although surgeons were liable to error, they were able to take the wind out of the sails of veterinary surgeons and obtain the credit to themselves for the discovery of the cause of such an outbreak; he was glad the public would have an opportunity of becoming acquainted with the fact that credit was due to Messrs. Tom Taylor and T. Greaves (hear, hear), and he trusted the public would give these gentlemen that due reward which was theirs in a case of that kind. He could refer to the Contagious Diseases Act with rather peculiar feelings, because he was the first victim of the action of that law under that Act—as they would know he lost a case in the Court of Sessions, in which he was pursued by a dairyman for the value of two cows he ordered to be slaughtered when they were suffering from pleuro-pneumonia. He was not going to enter into the merits of the case, he lost the case on a point of law which was laid down by a session judge, and which he had no doubt would have considerable influence with inspectors, who had taken upon themselves the ordering for the slaughter of animals suffering from contagious diseases. He found at least that one of the animals was suffering from pleuro-pneumonia—the cow was seen by four veterinary surgeons, three besides himself, all men qualified for the work, and they came to the conclusion that she was suffering from pleuro-pneumonia; two professors, however, said the disease was not pleuro-pneumonia. The judge said, if there had been no difference of opinion here, as to the nature of the disease, still the defender is liable to be pursued for damages, which, however, under the circumstances would only be nominal, and compensation could be claimed from the local authority. He had been informally and formally an inspector in Edinburgh for about eleven years; in 1869 he was formally appointed and he believed he had given satisfaction. In 1873 the compulsory slaughtering clause came into operation, and they (inspectors) received authority from the local authority to cause all animals affected with pleuro-pneumonia to be immediately slaughtered; they gave them power to put a valuation upon those cattle and order their immediate slaughter. They had been repeatedly urged to see that the order was carried out, that all infected animals should be at once slaughtered in order to prevent the propagation of the disease. He thought that was a very wise act on the part of the local authority, the chairman of which was a lawyer of great repute, who was under the impression that the local authority had a right power to do that, that the power remained with them and that they need not be consulted by their

officers on every individual case. But the judge ruled that the local authority had no right to delegate their powers to inspectors, that inspectors could do nothing more than make an inspection, and make a declaration first to the owner, afterwards to the local authority, they were to consider it, and inquire whether the case was pleuro-pneumonia. Thus it was that the local authority only had power to grant orders for slaughter. He lost the case while acting upon advice of the local authority; he was glad to say that the matter did not affect him financially, but the case to him was not satisfactory, because he felt he had acted judiciously and honestly, so far as his instructions went in that case. Now, however, as it had been announced in the Queen's Speech that the law in this matter would be reconsidered, and that they were going to have a new Act of Parliament, it would be well for the advisers of the Privy Council to consider whether these powers should still remain in the hands of the local authorities or should be given to the inspectors. During the months of August and September, and in fact in the summer months, it would be a matter of impossibility to carry out the regulations as they existed, as they knew many of the people in Edinburgh left home in the summer, and there was scarcely a man to be seen for months, so that the inspectors would not have any one to consult, and the Act would virtually be a dead letter. He thought, however, he had said enough to show that inspectors would have to be cautious, and that they had no right to act upon the authority which they received from the general local authority. He should like to know the opinion of the meeting on the various customs of carrying out the law. There was a meeting to be held shortly in Edinburgh as to how the act was being carried out, and as to what was the right course of procedure in cases of pleuro-pneumonia; he should be pleased to hear some remarks on the subject.

Mr. Reynolds (Liverpool) said that in some of the Midland Counties there was an inspector to order the slaughter of cattle, but it was the duty of the police to see the order carried out. It was undesirable he thought for a veterinary surgeon if he was a general practitioner to have in his power the ordering of the slaughter of cattle, because it was calculated to bring him into disrepute in his district, and he would thus be a sufferer. With regard to the local authority in Liverpool, the Contagious Diseases Act was almost a dead letter. The inspections under the Contagious Diseases Act were made by one of the medical officers of health, and carried out by men whose qualifications were those common to ordinary intelligent butchers; very little had been done with regard to compulsory slaughtering of diseased animals.

Mr. Elam (Liverpool) remarked that he was called to a case in which some cattle were to be slaughtered under the compulsory slaughtering clause. The inspector had stated that it was pleuro-pneumonia, and would have the cattle killed, although he

was told by a veterinary surgeon that the disease was tuberculosis; he (Mr. Elam) saw the animal, and a more marked case of tuberculosis could not exist. Mr. Reynolds said he saw the animal which was seized by the inspector (who was formally a butcher), and it was a most clearly marked case of tuberculosis with not one single mark of pleuro-pneumonia about it.

Mr. Moore, port inspector (Liverpool), said he could give an illustration of the way matters were conducted in Liverpool; not long ago he had to call the attention of the town clerk to two pigs, just arrived from Ireland, suffering from foot-and-mouth disease. It appeared that his notification (which was a telegram) was put into the hands of an inspector of nuisances, who had to come down and inspect the animal; he made it out that the case was one of sore toes, but as soon as it was hinted that it was foot-and-mouth disease they were taken away in a cart and destroyed. As regards Prof. Williams's request regarding the custom of the profession in various parts of the country, he might say that the magistrates in quarter session were constituted a local authority, and when a country was extensive, they appointed sub-committees for each district, so that some of the members would be on the spot when wanted; each district had its own inspector. The proposition for inspectors to have the power to order the slaughter of animals was open to grave objection, and particularly so as regards the compensation clause. The usual way, he thought, was to issue a note to the effect that the animal was suffering from an infectious disease, and send it to the local authority, who had power to send some one to value the animal. The safest way was to have the animal properly valued, because if there was a dispute over a cow which had suffered from pleuro-pneumonia, and which had been buried with quicklime, &c., things might crop up which would be very unpleasant to an inspector—for instance, an inspector might state that the cow was worth £1500, a claim might be put in for £2000, there ought to be some one to value the cow. At the same time there ought to be some means devised so that immediate steps could be taken without having to wait for the local authority who might not be near (hear, hear).

Mr. Hill (of Wolverhampton) said that in his district every veterinary inspector had to express an opinion as to the nature of the disease, whether it was pleuro-pneumonia, or glanders, or anything else. The person appointed by the corporation gave the order for the destruction and then the veterinary surgeon made a *post-mortem* examination. He mentioned a case in which a cow was slaughtered, and afterwards the surgeon found a piece of wire protruding into the diaphragm, which no doubt had been there a long time, as there was no inflammation; this person on finding the wire said he (the speaker) had erred in his opinion, and he was told he would have to pay for the cow. The lungs were taken to another veterinary surgeon, who confirmed his opinion, but the gentleman he had mentioned would not give

way, and the end of it was that he had to pay £25 as damages for the cow, which belonged to the corporation (laughter). In the borough with which he was connected they expressed an opinion as to the state of the animals, and had no liability excepting having given that opinion; we never gave an order to destroy.

Mr. A. Challinor (Bolton) said that when he found an animal suffering from pleuro-pneumonia, he granted a certificate to that effect, and the police shot the diseased animal and afterwards made a *post-mortem* examination; previous to the slaughter of an animal two respectable farmers were called in to value the cow. The magistrates would not have the beast destroyed until he had sent his declaration.

Mr. W. G. Schofield (Pontefract), said in his district the superintendent visited the farm or place where cattle were unwell, and he then called him (the speaker) in and he gave a certificate. If the case was one of pleuro-pneumonia, two valuers were called in, one from the township in which the case occurred, and another from an adjoining township. The superintendent received the order in general terms, he believed from Wakefield.

Professor Williams.—He acted illegally.

Mr. Thomas Taylor said the line laid down in the county of Lancashire was simple. When a cow was reported ill the policeman in the depôt nearest the farm was sent for, and he reported at once the case to his superintendent (Mr. Superintendent Bent); he would send Mr. Taylor a note, asking him to go and examine the cow in question. If a case of pleuro-pneumonia, he gave a certificate to that effect, and that certificate was placed before any magistrate residing within the county, and he gave the order for the immediate slaughtering of the animal. In many cases a *post-mortem* examination was made. Many alterations had been made by the Privy Council in their instructions. In some instances no *post mortem* was to be made; the animal was to be buried without any opening in the skin, except slashing through the skin to destroy it. Other instructions were that there should be a *post mortem.* However, he was paid for every journey he made, whether for examination or *post mortem;* he considered that a professional man's time was such as ought to be paid for. He was convinced that Mr. Superintendent Bent managed the portion of his duties relating to cattle disease with great efficiency. He (Mr. Taylor) had never had any trouble with him, and he did not think he had had one difficult case since the compulsory clause came into operation. It is always compulsory, before the destruction of an animal, that the magistrate's order should be obtained. The animals were valued by two farmers, and compensation was paid on the usual scale.

Mr. J. Rowe, London, said their medical society met on the previous day, and Mr. Shaw, of Hackney, submitted a circular from the Board of Works as to whether cattle which had been inoculated for pleuro-pneumonia, and then died, could be justly claimed for, seeing that, as board like, as London had taken the

matter up, it might uncomfortably present itself to the notice of members of this society.

Mr. Peter Taylor said he had listened with much pleasure to the president's address. It had gone over much valuable ground. First, the president had alluded to the Contagious Diseases Act; secondly, to appointments of inspectors, and to the appointment of such office of policemen and butchers; thirdly, he had dealt with the examination of the pupils; and, fourthly, it had gone into appointments to various positions. There was no doubt as regards the milk poisoning, to which their friend Mr. Greaves had referred; they had it before them on their last annual meeting. He thought it was the duty of veterinary surgeons, although they might differ from the members of the ordinary profession, to show a large amount of charity. Veterinary surgeons, even to the present day, were indebted in a great measure for the amount of knowledge they possessed to the medical profession. He had attended five classes at the school of medicine when with the late Professor Wich, and he felt to this day that he had learned as much from the medical profession as he had from his own veterinary professors. He thought that they, as a profession, should not be hard upon them, even if they had been misled in a case of secretion of milk in one particular cow, and as to whether an epidemic had sprung from deleterious water. Regarding the inspection of meat, it was an extensive subject. Even veterinary surgeons, if they were elected as inspectors, would, in his opinion, want a great amount of practical knowledge, which few, even at this present day, had in a broad degree. It was, he thought, very difficult and doubtful to come to an accurate opinion as regards the sound character of meat without seeing the living animal. They might see its structure when dead, but it might be altered by extraneous matter, in colour, character, and density. In respect to the duty of Government to elect veterinary surgeons, they might for some time still continue to be in want of recognition by the Government; but he always found in his own practice that if they wanted to raise their profession and obtain a position for themselves, the work must be done by their own diligent efforts. It would be some time, he thought, before they would be put in their proper place by the Government. With regard to the examination of the veterinary student, he felt that it was quite sufficient, even at the present period, for the veterinary pupils as they now were. He considered the course a very good test, and it was a test which qualified to rank even in the medical profession. In the examination a man was rejected if he came below the standard, and there was no favour shown. And now with reference to the Penal Act. He could say a great deal on that point, and he believed there was no man present who desired the Act more than he did. In seeking to obtain an Act to protect their science and their position as veterinary surgeons, he was of opinion some length of time would elapse before such an Act was obtained. There were two or three reasons why he

formed that opinion. In the Scotch colleges they had examiners and diplomas of their own. Lately they had heard much of their legislature regarding the sanction of titles which had been called, he considered not justly, "spurious" titles. If a man studied at a Scotch college appointed by the Highland and Agricultural Society, and received a diploma, he did not think that was a spurious title. If the Royal College of Veterinary Surgeons did not, as they did not at the present time, accept the diploma on the same ground, they would never obtain a penal clause until they got the Highland and Agricultural Society amalgamated with the Royal College. If they were to ask the House of Commons to grant a Penal Act to protect their rights, they would not grant anything restrictive, for they would have all the weight of the Scotch noblemen against them, because they were treating their Scotch students as empirics. Now, to obtain such a clause would cost, if the measure was unopposed, at least £250, but, if opposed, would cost some £3000 or £5000, or perhaps £10,000, and where was the money to come from? Many remarks had been made on the subject, and people had said they ought to get such an Act. The members of council were not immaculate, they endeavoured, to the best of their ability, faithfully to do their duty for the benefit of members at large, but show them how to get the Act, and they would obtain it to-morrow for the whole of the profession. He, however, feared they would never be successful until they amalgamated with the Highland Society. He was in favour of election by ballot (of council men). It was a step in the right direction, and he had no doubt it had been carried out by the very able and intelligent chairman of the council (hear, hear). There was no man with greater ability, or who had the science more at heart, and in favour of progress, than Sir F. Fitzwygram. If they had had a few more men like him they would have had greater and more rapid strides in the advancement of their calling. However, as to the appointment of veterinary surgeons by the legislature, that would, he thought, depend in a great measure upon the veterinary surgeons themselves. They must work and keep ahead of the day, and show the public that they have not only the ability, but also the science at heart, and they must prove that they knew how to fulfil their duties with credit not only to themselves and their profession, but to the country at large. At the last council meeting they had a great discussion on the proposition of the president to suspend bye-laws 32 and 33, with the object of admitting gentlemen holding the Highland Society's certificate by one examination, to obtain the diploma of the Royal College. This was to be brought forward again at the next council meeting, and he should, as representing their interests, like to know what was their private opinion on the subject. Were the great bulk of that society to come in in this way, he thought, unquestionably, they would not be doing justice to their own students, and he certainly spoke with great warmth, because he considered the council should in the

first instance make overtures to the Scotch society for the purpose of seeing if the two societies could not amalgamate, and have one examination and one diploma, and then he would say to these men, "You give no diploma, leave it to us to do that, and we will admit all your members, and pay no respect to persons." With no examination—for they have a preliminary examination—they served three sessions at college, and passed a severe examination, and obtained a diploma from the Highland and Agricultural Society. He could not see that the suspending of the bye-laws would do any good until they got the whole of the veterinary profession in one society. What they wanted was a united and appreciated profession (applause).

The Chairman said that, with regard to the introduction of the Eagley milk-poisoning case, he brought it forward without having in the least an unfriendly feeling towards the medical profession. It was quite the reverse; he wanted to bring the case forward as one in which they had come into their (veterinary surgeons') province, for he thought veterinary surgeons could not do work of medical men, neither could medical men do theirs (hear, hear). He felt very kindly towards medical men, and admitted that they owed much to them, and he wished to look towards them in no spirit of unfriendliness. With regard to the appointment of inspectors, they seemed to have to some extent lost sight in the discussion of the fact that many of those calling themselves veterinary inspectors were not inspectors at all, but policemen who were doing the work, and they simply asked for the opinion of the veterinary surgeon. He believed these men in some cases have the permission to kill cattle without asking for a veterinary surgeon's opinion. The Privy Council gave instructions, and their instructions were based on Act of Parliament, and he found that really the local authorities had power to appoint the police, and the police, to cover themselves from blame, called in a veterinary surgeon, but were not bound to do so. That state of affairs and other points bearing on the subject ought to go before the authorities who were going to give them a new Act of Parliament. Then as to the suspension of bye-laws; personally he thought it would be wrong to suspend them unless the Highland Society discontinued the granting of their diploma, and if so, then they might make the alteration. It was said the Highland and Agricultural Society have a right to grant the diplomas, but he did not agree with that assertion, for he did not think any agricultural society had a right to grant such certificate. The procedure had grown into a custom, but he thought it was not right; if they could charge the opinion of the meeting it perhaps would be a help to their representative, Mr. Taylor, and if any one would propose a motion he would endeavour to get an opinon as to whether the bye-laws should be suspended or not (hear, hear).

Mr. P. Taylor said he would suggest a motion to the effect whether it was their opinion the bye-laws should be suspended

or not; on the other hand whether they should rather not suspend the bye-laws until they made application to the Highland Society to forego granting diplomas, and give them the promise to admit them all. Mr. Tom Taylor thought it was the duty of the Liverpool deputation which was appointed to say what answer they received from the Scotch Society with respect to the now granting of their diplomas. Might he enquire if the society had yet been asked for a reply? (a voice, No); until they were asked about the matter they could not give an answer. Mr. Reynolds said, that Sir F. Fitzwygram and Professor Williams were appointed by a committee to communicate with the Highland Society; he did not know what steps had been taken; he had read a letter from Mr. Blakeway, in which he stated he was not able to give an answer, nor did he know any one who was. Mr. T. Taylor said it was undoubtedly carried unanimously that there should be a move in the matter, and he wanted the answer of the Scotch Society. He supposed they had not been applied to, but he thought it was the duty of the committee to have attended to the matter.

The Secretary said he should be glad to take a motion.

Mr. Tom Taylor moved that this meeting is of opinion that the Council ought not to suspend the bye-laws until they have communicated with the Highland and Agricultural Society of Scotland as to the discontinuing of granting their diploma.

Mr. A. Challinor seconded the motion, which was put to the meeting, and carried unanimously.

The proceedings then closed, afterwards the members and friends dined together.

SAM. LOCKE,
Hon. Sec.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A MEETING of the above Association was held at the Star Hotel, in this city, on Monday. The president, Mr. H. J. Cartwright, of Wolverhampton, occupied the chair, and among those present were—Professor Williams (Edinburgh), Messrs. Thomas Greaves (Manchester), A. B. Proctor (Coventry), F. Blakeway (Stourbridge), J. W. Hill (Wolverhampton), H. R. Perrins (Worcester), J. L. Barling (Hereford), Wiggins (Market Harborough), H. M. Stanley (Birmingham), Goule (Malvern), O. J. Hills (Leamington), W. Carless (Stafford), G. Carless (Worcester), Rose (Alcester), R. Cartwright and Beddard (Wolverhampton), Collett (West Bromwich), 'Faulkner (Manchester), Coe (Stoke-upon-Trent), S. D. Newby (Bradford), W. Dale (Coventry), Pinkett (veterinary student). Letters and telegrams stating inability to attend were received from Messrs. J. Carless, Holne, E. Price,

jun., Pyatt, E. Stanley, Hodgkins, Bryer, Bowles, and G. Morgan.

Mr. G. Carless, hon. sec., proposed the following as new members:—Professor Pritchard (Royal Veterinary College, London), W. Bryer (Cheltenham), A. Bowles (Abergavenny), and H. Dale (Coventry). Mr. J. L. Barling proposed Mr. F. W. Barling (Ross), and Mr. C. W. Barling (Newnham). They were all unanimously elected.

The President then delivered the following inaugural address:

Fellows and Members of my Profession,—In rising to address you, permit me, in the first place, to thank you for the honour you have conferred upon me in electing me your president for the present year. I felt great diffidence in accepting this honorable position, one which has been so ably filled for several years. However, with your indulgence, I will endeavour to perform its duties, and to the utmost of my ability promote the advancement of our profession. There are a great variety of topics which I am anxious to discuss in this address, as it is right they should be from time to time brought prominently before the profession, so that every member can see what is going on in it, and what progress is being made.

The Royal College and the Schools.—The chief interest in our profession always centres in the Council of the Royal College of Veterinary Surgeons and the teaching schools. In alluding to these it will be necessary for me to refer to the preliminary examination of the youth as he enters the college. This step has become absolutely necessary, and has been adopted at each college, but, as now conducted, it is open to abuse, and the good that might accrue is only in part secured. It should, by all means, be conducted by examiners appointed to the Royal College of Veterinary Surgeons, in order to secure an uniformity of test, instead of, as at present, the schools appointing their own examiners. We find that a student rejected at one of the colleges may present himself before the examiners of another college and be admitted. This could not take place if this examination were presided over by one authority. If this arrangement were properly carried out it would raise our profession to a higher status. The lengthened term of study required at college has been found necessary in consequence of the greater number of subjects taught, and each subject being taught more fully than in the past. There are now five sessions, or what are called five terms, instead of two sessions as formerly.

The New Charter.—The new charter provides that the annual meeting shall be held in London, Edinburgh, or Dublin, instead of always held in London as before. The tendency of this alteration will be apparent; it will remove in a great measure the jealousy that has ever existed on this point. The new charter enables the whole profession to take part in the elections of members of council by voting papers, instead of, as heretofore, being compelled to attend personally the annual meeting in

London on the first Monday in May in each year for that purpose. I flatter myself you will all agree with me that the tendency of this change will be to cause the members of the profession through the length and breadth of the land to feel a greater interest in the welfare of their profession, and is more likely to secure the best men that can be found, and ensure the bringing forward of the best measures for the advancement of our profession.

The Reorganization of the Court of Examiners.—I cannot too highly commend the action of the Council in the change they have adopted in the Court of Examiners, both sections being composed as nearly as possible of the same examiners. By this means the students educated in the Scotch schools will have precisely the same test as those who have been taught in London. The election of examiners is now for five years instead of for life as was the case before. This of itself has a tendency to raise the profession; it holds out an inducement to those of its members possessing talent and education of one day occupying the high and honorable position of examiner.

The Practical Examination.—Until recently the examiners had no means of testing the student as to his practical attainments. This is a point which I have always considered of very great importance, and it was highly satisfactory to me to find the Council adopting means of testing the student as to the extent of his practical knowledge in manipulating his patient, and diagnosing disease. For after all, gentlemen, when we come face to face with the realities of our calling we shall always find that this knowledge will be the most important element towards our success in after life. It is notorious that the man who possesses this practical knowledge in the highest degree is the most sought after, and commands the greatest confidence. So strong are my convictions upon this subject that I feel I cannot perform a greater service to my profession on this occasion than to urge most earnestly upon the young practitioner and aspirant (if he is desirous of becoming clever and respected, and as such an ornament to his profession) to become as proficient as possible in a department which is so essential to a man of business. I mean a man of business habits—one who must be able not only to understand the ailments of his patient, but able also to explain it to the employer in an agreeable and satisfactory manner, or, in other words, he must instinctively, as it were, diagnose correctly, treat properly, go about his work in a workmanlike manner, use discretion, frankness, and tact with his employer, avoid too much loquacity, or the contraction of offensive manners, be attentive and diligent to his duties, smart, steady, and industrious in his habits, strictly punctual and honorable in all his engagements, avoid making charges out of proportion to services rendered, and it must follow that he will gain the esteem and confidence of his employers, be a credit to himself, and an honour to the profession to which he belongs.

Examination of the student for his Diploma.—This is another subject which I am anxious to refer to. It has been the custom until recently for the student to undergo only one examination for his diploma. He is now subjected to an examination at three different periods of his studies. The great advantage of this will be apparent to every member of the profession. The student is enabled to concentrate the whole of his attention on the number of subjects specified for that session. He then undergoes an examination in those subjects. If the ordeal is satisfactory his mind is then relieved of them, and he is at liberty to give his whole attention to another division of subjects, which occupy another session, and so on until he completes his studies. By the adoption of this course the student of the present day is enabled to become more efficient in every department of his studies, and with these advantages it is expected he will be better able to combat disease in its various forms, "a consummation devoutly to be wished for."

The New Charter and the Penal Clause.—This is a subject which many of my professional brethren feel strongly upon. The Council were most anxious to have it incorporated in our New Charter, but they were advised by the Parliamentary agent that it would be entirely inoperative in a Charter, and that such a power can only be authorised by an Act of Parliament, to make it an indictable offence for any man to assume the name and title of Veterinary Surgeon who does not possess a diploma from the Royal College of Veterinary Surgeons, as well as to give power to a magistrate to inflict a penalty or fine of ten pounds for each offence. You may be ready to ask me why the Council do not at once apply to Parliament for such an Act? In answer to that question, I say the present time is inopportune, as a strong opposition would be brought to bear. However, we have good reason for believing that by waiting a little time it is probable that this opposition will no longer exist. We have much better opportunities of knowing the feelings and intentions of those who think it is their interest to oppose us. This matter is very delicate you will therefore, I am sure, not expect from me a more minute or definite explanation; but you may feel assured we shall be unanimous in applying to Parliament when the time comes, and such an application in my humble opinion will be successful. It is, I assure you, with feelings of pride and gratification that I can say I have always identified myself with the party of progress in the Council, and in every one of the measures which I have referred to my vote has been given always with the ayes.

I cannot conclude without expressing my regret that the endowment left by the late Professor Dick for the advancement of veterinary science is rapidly dwindling away. In the December number of the *Veterinarian* it is stated that the Dick Trust is in debt to the extent of £4527, and that there was an increase of the indebtedness during the year 1877 of £722, making a total sum of £5249. It has been my opinion that two schools are

sufficient for Great Britain; that if this were the case, better teachers would come forward, and consequently the students would receive greater advantages. Having these views, and looking to the rapid diminution of the Dick Estate, I would humbly ask my friends in the North if the time has not arrived for them to consider ther positions, and to close a contest which has hitherto been of no advantage to themselves or to the profession.

Gentlemen, allow me again to thank you for the high honour which you have conferred upon me, and for your kind attendance here to-day. All I can do for the advancement of this society shall be done willingly and with great pleasure, and I trust that I shall, with your kind assistance, leave the society to my successor even in a more flourishing condition than it has been left to me.

Professor Williams opened the discussion. He quite agreed with the Presideut that the preliminary examination was on a wrong basis. He had always been of opinion that it should be conducted by examiners appointed by the Royal College of Veterinary Surgeons, but he yielded to the persuasion of his friends—who said that half a loaf was better than no bread—and consented to the establishment of an examination board in connection with the schools. He should hail with gratitude the day when the schools would be unanimous on the point, and should most readily give up the power he now held as an examiner for one of the schools. It was gratifying to possess power, but if it were a bar to the advancement of the profession the sooner it was taken away the better (applause). He believed there would be almost unanimous consent in Scotland, but he was sorry to say the London school had objected all along. As to the subject of apprenticeship, he knew there was considerable feeling in the profession. He thought he saw his way, in the course of time, to a compromise in the matter, which would be beneficial to the schools, the students, and the profession at large. Instead of having two summer sessions, he would suggest that there should be one, the second summer to be spent with a veterinary surgeon. When a student had passed two examinations it was, he thought, a hardship to compel him to be at college during the next few months. In regard to the number of examinations, perhaps two might answer the purpose better than three. He was sorry to come to the conclusion that some young men cared little about the subjects they were examined upon, and when they went before the world as practitioners they had forgotten many things which were essential to success. The question of a penal clause had been touched upon by the President in a very delicate manner, and he would only ask the profession to refrain from taking any hasty steps. Then, in a very short time, they would have a penal clause without any opposition. The President had hinted that there were too many colleges in Scotland, and as the representative of the one last founded this rather touched him on the raw. He was a student of the school founded by Professor Dick, and

its success was dear to him, but such was the force of circumstances that he was compelled in defence of his own good name to establish a second college in Edinburgh, and he was glad to say that so far it had prospered. Referring to the President's remarks as to the importance of practical knowledge, Professor Williams said he thought it would be a good plan, if the means of doing so could be found, for young men of ability, who were capable of teaching the practical part of their profession, to be kept at college for two or three years after obtaining their diploma. The students could then be divided into classes of 20 or 30 each, and placed under the charge of those teachers, the work being superintended by the principal and other professors. By that means they would have a better class of men sent out from the colleges than in the past, for it was well known that many students who passed the examinations went before the world with very little knowledge of the practice of the profession (applause).

Mr. Greaves testified to the encouragement which Professor Williams had always given to the movement in favour of a preliminary examination of students, and pointed out the importance of such an examination. He thought the time would come when it would be more strict, and it would be all the better for the profession. He was pleased to hear Professor Williams say that it would perhaps be better if some of the time devoted to the subjects now taught at college were spent in practical teaching. The youth who saw practice before he went to college, and he might see it also whilst he was there, would be best qualified to do himself and the profession good in after life. In regard to apprenticeship, Professor Williams had made a suggestion, and he (Mr. Greaves) thought it would be a considerable step in advance if it were made a condition of a student being examined for a diploma that he had been with a practitioner for three or six months. Then, in a few years, they might get the time extended, and so secure a great boon to the profession (applause).

Mr. H. Stanley said they should not be satisfied until there was a year's apprenticeship clause. He thought there should be an expression of the opinion of the meeting on this point.

Mr. W. Carless said that members of the profession would do a great deal of good if, when they had opportunity, they pointed out to parents and guardians how important it was that students should spend a portion of their time with practitioners.

Mr. Barling was in favour of the meeting expressing their opinion that there should be an apprenticeship clause. He thought there should be a two years' apprenticeship, and that during the last winter the youth should be allowed to go to college.

Mr. Wiggins and *Mr. Perrins* also spoke in favour of apprenticeship for at least two years.

Mr. Proctor suggested that more practice might be obtained at the colleges.

Mr. Blakeway, being solicited to make a few remarks, spoke of

the necessity of students acquiring practical knowledge, but thought it would be inopportune to pass a resolution at that meeting.

Mr. Greaves said that when the Act of Parliament was applied for a clause might be inserted dealing with this matter.

The President agreed with Mr. Blakeway that it would not be advisable to pass a resolution, but said the feeling of the meeting was clearly in favour of apprenticeship.

On the motion of *Professor Williams*, seconded by *Mr. Proctor*, a vote of thanks was awarded to the President for his address, and the meeting requested him to allow it to be published, to which he consented.

Votes of thanks were also given to Mr. Blakeway as treasurer and Mr. G. Carless as secretary. The proceedings then terminated.

Subsequently the members dined together at the Star, Mr. Cartwright being in the chair, and Mr. G. Carless in the vice-chair.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE opening of this Association took place on Thursday evening, January 3rd; there was a full attendance of members and a number of visitors. Professor William Osler occupied the chair.

After the usual routine business, *George Parkison*, Bridgeport, Conn., was called upon to read his communication on a case of tetanus with special reference to accurate clinical notes of the pulse, respirations, and temperature, carefully noted and systematically arranged, for which he was highly complimented by the chairman and others present. *Professor McEachran* was next called upon to read a paper on "Soundness and the Law of Warranty," in which he explained the different definitions of soundness and unsoundness. While admitting the correctness of the usual rendering of the term to mean "an animal eventually free from any alteration in structure or functions," he inclined to the more practical view taken of soundness given by Oliphant, that "when a horse is free from hereditary disease, is in possession of his natural and constitional health, and has as much bodily perfection as is consistent with his natural formation," a veterinary surgeon may safely certify him to be sound. He considered that whatever alteration in structure or functions so affects the animal as to interfere with his usefulness or reduces his value renders him unsound. According to Lord Ellenborough, "any infirmity which renders a horse less fit for use or convenience is an unsoundness." Percivall says: "A horse which has that about him which is likely, on work, to render him lame, is unsound." After carefully describing the law, as laid down by the best English authorities, as to soundness, he took up the law of warranty.

"By the civil law of England, a person is bound to warrant the thing that he sells or conveys, although there is no express warranty; but the common law binds him not, unless there be a warranty, either in deed or in law, for *caveat emptor*, the meaning of which is that the buyer takes the article sold with all its defects, and must not look to the law for redress if its intrinsic worth does not correspond with its outward appearance" (Stuart). "There must be either an express warranty of soundness or fraud in the seller to maintain an action" (Oliphant). In France, and in this province, a legal warranty attaches upon the seller, for the protection of the purchaser, against "latent defects and diseases," which are presumed to be within the knowledge of the horsedealer. C. C., 1522, says: "The seller is bound by law to warrant the buyer against such latent defects in the thing sold, and its accessories, as to render it unfit for the use for which it was intended, or so diminish its usefulness that the buyer would not have bought it, or would not have given so large a price if he had known them." C. C., 1523, "The seller is not bound for defects which are apparent, and which the buyer might have known himself." C. C., 1424, "The seller is bound for latent defects, even when they are known to him, unless it is stipulated that he shall not be obliged to any warranty." According to Deglan (action Redhibetoire) the time allowed by the French law to bring an action to return a horse for specific ophthalmia and epilepsy is thirty days, and nine days for all other diseases which constitute unsoundness under their laws. Our own common law establishes no certain number of days within which an action has to be taken. C. C., 1530, says, "The redhibitory action resulting from obligation of warranty against latent defects must be brought within reasonable diligence, according to the nature of the defect and the usage of the place where the sale was made," thus leaving to the judge to determine whether or not the plaintiff has acted in the matter with due diligence. The different diseases which constitute unsoundness were noticed in detail, and the reasons why they constituted unsoundness explained. A few remarks were made on horse dealing and the "tricks of the trade," of which, as stated by Prof. Gamgee, it was a mistake to suppose that all the sharp practice is on one side. It is a wonderful fact, but yet it is a fact, that the horse, next to man, about the noblest object in creation, appears to have a tendency to corrupt all those who deal in him.

ONTARIO VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this Association was held December 21st, in the Ontario Veterinary College, Temperance Street, Toronto. The profession was well represented by a large attendance of members from all parts of the province, as well as some from the United States. Professor Smith, the President, opened the meeting with an interesting address, in which he congratulated

the members on the increasing interest taken in the Association, and also the continuous improvement in the standing of the profession, and its appreciation by the public, contrasting favorably its position now with what it was in this country ten or fifteen years ago. The election of officers for the ensuing year was then proceeded with as follows:—Professor Smith, President; Mr. Wilson, V.S., London, first Vice-President; Mr. Duncan, V.S., Goderich, second Vice-President; Mr. Cowan, V.S., Galt, Treasurer; Mr. Sweetapple, V.S., Brooklin, Secretary. Directors: Messrs. C. Elliott, V.S., St. Catherine's; J. S. Cæsar, V.S., Port Hope; A. O. F. Colman, V.S., Ottawa; — Grange, V.S., Guelph; — Sanderson, V.S., Richmond Hill; — Burns, V.S., King; — Harrison, V.S., Milton; — Bond, V.S., Toronto. A number of new members were then admitted, after which several discussions took place on matters relating to the profession. A sum of money was voted by the Association to procure medals to be awarded to the students of the Ontario Veterinary College at their examination in April. Several interesting professional cases and surgical operations were discussed, most of the gentlemen present taking part in the discussion. The Association then adjourned, to meet again in Toronto during the time of the Provincial Exhibition. Mr. G. E. McEvers, of Buffalo, and Mr. R. M. Somerville, of Buffalo, were awarded their diplomas.

PARLIAMENTARY INTELLIGENCE.

House of Lords.—*Tuesday, Feb.* 12.

The Lord Chancellor took his seat upon the woolsack at 5 o'clock.

CATTLE DISEASE.

The Duke of Richmond and Gordon, in calling attention to the report of the Select Committee of the House of Commons on cattle plague and importation of live stock, and in presenting a Bill to amend the Contagious Diseases (Animals) Act, 1869, commenced by observing that the question was one deeply affecting the interest of the whole country, and he therefore drew no distinction between the interest of the consumer and the producer, as he considered them identical. He would first touch shortly upon the previous inquiries that had been made into the subject, and the legislation which had already taken place. He need not go back further than the outbreak of the cattle plague in 1865, which raged so furiously that a Royal Commission was appointed, and in 1869 the various measures adopted culminated in an Act of Parliament applying to England and Scotland, which gave power to define the ports at which foreign animals should be landed and detained in quarantine as it were. Since 1872 no animals had been allowed to be imported from Russia, and since that time Orders in Council

had also prevented the importation of cattle from France and Belgium. The principle of the Act of 1869 was to leave the regulations as to the movements of cattle to local authorities; and when they considered that there were 411 such authorities in England and Scotland, it was not surprising that the regulations were somewhat diverse. He by no means complained of the operation of that Act, which had effected great good, but it was now ten years since the passing of the measure, and defects had become apparent, which had been dealt with in the measure which he should submit to the House. In 1873 a Committee was appointed which made certain recommendations, some of which, such as the appointment of cattle inspectors, he had adopted by Orders in Council, and as a result there had been a marked improvement in the disinfecting of railway trucks, &c., and the disease had been greatly restricted. Other recommendations of that Committee had not yet been carried out because he preferred to deal with the matter in a comprehensive manner, not considering that measures relating to the food supply of the country should be dealt with piecemeal. From 1874 to 1876 there was a good deal of foot-and-mouth disease, and last year it increased to a great extent, and pleuro-pneumonia had broken out in the metropolis, having been brought in the first place from Hull. It was clear that the local authorities had not sufficient power to deal with it, and the Privy Council had to take strong measures in order to stamp out the disease, the result being that it was stamped out in a comparatively short time. While the disease was in progress he was much urged to exclude all foreign animals from coming to this country, but he did not think it right to do so without further information. He might have had the power to act under the Act of 1869, but he should hardly have been justified in adopting so strong a measure which he did not consider within the spirit of that Act. A new feature had also arisen in the importation of dead meat and live cattle from America, and the Government thought the time was come to appoint a fresh Committee of Inquiry into the cattle disease and the food supply. Upon that Committee there were members who represented the Scotch and Irish interests, county members, and members who represented some of the largest manufacturing towns in the Kingdom; and the Committee so constituted was entitled to the highest consideration. As to the rinderpest or cattle disease purely, he had adopted the recommendation of the Committee, in which he entirely agreed, and proposed to deal with it by a central authority. As regarded pleuro-pneumonia and the foot-and-mouth disease, although extremely prevalent, the manner in which they should deal with it would depend on three considerations:—whether, in the first place, it was worth while to try to stamp it out; secondly, whether there was any good prospect of success if they attempted to do so; and thirdly, what means were necessary to be adopted in order to stamp out pleuro-pneumonia and foot-

and-mouth disease, which in this country was really more fatal than rinderpest itself. The noble duke then quoted the evidence of Mr. Booth, an eminent agriculturist, and one of the greatest breeders of cattle in Scotland, Mr. Jacob Wilson, and Mr. Howard, of Bedford, who all concurred in the enormous loss that the country sustained by the prevalence of the foot-and-mouth-disease, and showed that farmers who had sustained serious losses refused to continue to breed. According to their testimony, there was much loss, not only to the producers, but to the consumers of stock, and milk, butter, and cheese were very much affected. The outbreak of 1865 was so great that in Cheshire, where there was a great deal of pasture, persons travelling through the county could actually see heaps of cattle that were obliged to be slaughtered and buried, and there was a great reduction in fat stock. Mr. Booth on one occasion having fattened bullocks in August, he was offered £34 each for them, but the disease having broken out among them, not only did several die, but he could only obtain £34 each at Christmas. The existence of the evil he considered to be abundantly proved. Then the next question was whether there was a reasonable prospect of success, and he pointed out that when the restrictions were in full force in 1865, they completely stamped out the disease. He would not go so far as to prevent the removal of cattle throughout the whole country, though he believed that would stamp out the disease; but he was in favour of the most stringent restrictions in the affected areas, and he should, therefore, propose to adopt the recommendation of the Committee, to the effect that in the case of pleuro-pneumonia the movement of stock should be restricted for two months, and in case of foot-and-mouth disease for twenty-eight days. He was aware that this would impose heavy restrictions upon farmers, but he thought they would willingly bear them if they considered that by so doing they would eventually get rid of the disease altogether. But it was impossible to do so, and it would not be fair to the British farmer to make the attempt, unless they imposed a restriction on the importation of live cattle. In 1876 the number of cattle imported amounted to 1,317,006, out of which 11,662 were diseased.

With respect to the importation of dead meat, although a good deal of it had come from America, he did not think that the continental breeders would adopt that system very largely at present. It was absolutely necessary for the purpose of getting rid of pleuro-pneumonia that all foreign cattle should be slaughtered at the port of debarkation. He thought that the evidence went to show that this measure would not tend to diminish the importation of cattle nearly so much as many people believed, and also that this country was not nearly so dependent upon a foreign supply as was imagined. In 1877, whilst there was a loss on live cattle less than in 1876 of 319,200 cwt., there was a gain of 509,807 cwt. in dead meat, which showed that the

trade accommodated itself to the altered state of circumstances. The noble lord quoted the evidence of Mr. Rudkin, the chairman of the Markets Committee, showing the enormous quantity of sheep and cattle slaughtered at the ports and in other places, and also pointed out that in 1876 the Great Northern Railway carried 18,118 tons of meat, and in 1877 21,236, being an increase of 3180 tons, which represented no less than 60,000 bullocks. He also pointed out that by the present system of railway traffic dead meat was sent from the Metropolitan Market all over the country, and it was in evidence that small sheep were often sent down to Wales and sold as Welsh mutton. (A laugh.) With respect to price, he found that while the wholesale price in 1876 of beef was 5s. 1d. per stone, and mutton 5s. 10½d., in 1877 beef had only increased to 5s. 2d. and mutton to 6s. 2d., so that the increase in the price of each was a mere fraction of a penny per pound. Therefore he found that the Committee, having carefully considered the matter, came to the conclusion that the slaughter of animals at the port of landing was not likely to discourage foreign importation, decrease the quantity of meat brought to market, or affect the price of meat. There was one point on which he wished to say a word, and that was that an alternative was given to Ireland in the recommendation of the Committee. They recommended that there should be instead of absolutely slaughtering at the ports in Ireland a right to land cattle at certain defined ports, and that after an examination of the cattle they might be passed into the country. That recommendation they did not propose to adopt, but had determined to deal with the disease in Ireland exactly as in England and Scotland. (Hear). They knew very well that if they did not have the same restrictions in Ireland they would not stamp out the disease. There were eight Acts of Parliament in Ireland referring to this subject and two in England, and all these it was proposed to consolidate into one Act. They proposed that the Act should come into operation in 1879 in order that an opportunity should be given for the new arrangements to be made. The first part of the Bill related to the mode of procedure, the second part contained the enactments referring to England, and declared what restrictions should be adopted in infected districts, and regulated the compensation to be given by the Privy Council in case of rinderpest, namely, in those cases in which an infected animal was slaughtered £20, but where one which was healthy was so dealt with in the affected district, a sum not exceeding £40, or the value of the animal if less should be awarded. In the case of pleuro-pneumonia, the restrictions would amount to an absolute stoppage of movement, and certain compensation would be made out of the rates which was set out in the schedule. There was another matter of great domestic interest not previously dealt with, that was some regulations relating to dairies, so as to ensure a better and purer milk. (Hear.) As to foreign animals, they did not altogether carry out the full

recommendation of the Committee, which recommended the absolute prohibition of the importation of Russian, German, or Belgian cattle into this country. The powers of the Privy Council in that respect were already sufficiently large to prevent that importation at present, and it was not, therefore, necessary to include such provision in the Act of Parliament. If the Privy Council were trusted in one case they might be in the other, and would exercise their discretion in preventing the importation from countries in which the cattle plague existed. There was power given for slaughtering, and also for the quarantine of diary and breeding cattle. The Channel Islands were exceptionally dealt with, and there was also a provision in the Bill suitable for Scotland and Ireland. The Government had had three objects in view, one, the consolidation of the law; secondly, to ensure uniformity; and thirdly, to secure if possible the extinction of disease. No one could object to putting into one Act the ten which now existed. Then as to uniformity, no one could occupy the position he did at the Privy Council and deal with this subject without being convinced of the desirability of uniformity. The noble duke concluded by saying that he felt certain that with a proper regulation of fairs and markets, and the adoption of stringent measures in affected districts, there was a well-founded hope that within a comparatively short period the disease would be stamped out. (Cheers.)

The Marquis of Ripon approved of the course which the Government had adopted in dealing with this question, the importance of which could not be over-estimated. As one of the authors of the Act of 1869 he could not help adverting to the benefit it had conferred upon the country; and above all, it had formed a machinery which was available to carry into effect further improvements. (Hear.) At the same time he pointed out that the restrictions imposed would press very heavily upon the farming interest, and it was a little remarkable that the restrictions were not directed so much against rinderpest as against the diseases which were in this country already, namely, foot-and-mouth disease and pleuro-pneumonia, and he expressed a fear that it would be found impossible to root out that disease. He quite agreed that if such restrictions were imposed upon the farmers of this country the most stringent restrictions ought also to be imposed upon the importers, and that all animals should be slaughtered at the port of debarkation. In regard to Ireland, he thought that the course adopted by the Government was the right one, and that both countries should be put upon the same footing, being convinced that had they not done so there have been no safety felt in this country against the outbreak of the disease. The Bill would require close examination; therefore he hoped that the noble duke would not fix a very early day for the second reading.

The Duke of Richmond and Gordon said that he proposed to fix the second reading for that day three weeks.

The Duke of Somerset hoped that while bringing in a Bill to provide protection against the cattle disease, it would not be made a pretence for providing protection against competition. In respect to the foot-and-mouth disease, he did not agree with the noble marquis that it could not be exterminated; on the contrary, he thought that it might be gradually stamped out by constant attention and supervision. He feared that at present there was pleuro in almost every dairy in the kingdom, and he hoped that one result of this measure would be a thorough periodical inspection of dairies. (Hear, hear.)

Lord Dunsany approved of the course adopted by the noble duke in not making any distinction between England and Ireland, and adopting the alternative recommended by the Committee.

The Earl of Kimberley asked if there was to be any difference made between store and fat cattle, and also whether the restrictions would extend to the cattle imported from America.

The Duke of Richmond and Gordon.—There can be no distinction drawn between store and fat cattle, and the regulations under the Act will extend to cattle imported from America.

In reply to a question from the Marquis of Huntly,

The Duke of Richmond and Gordon said that it was intended to to treat the local authorities in Scotland precisely as the local authorities in England were treated.

The Bill was then read a first time.

ARMY APPOINTMENTS.

Simla, *October* 1*st*, 1877.

Indian Army Veterinary Medical Department.—Under the authority of H.M.'s Government, First Class Veterinary Surgeon George Kettlewell is promoted to the grade of Staff Veterinary Surgeon.

War Office, *February* 1*st*, 1878.

Veterinary Department.—The undermentioned Veterinary Surgeons to be Veterinary Surgeons of the First Class:

James Colman Berne, Royal Artillery; James Reilly, Royal Artillery; Francis Plomley, Royal Artillery.

OBITUARY.

Francis Grace, M.R.C.V.S., of Oxford. His diploma bears date May 20th, 1851.

Alex. C. Muir, M.R.C.V.S., Belharm, Haddington. His diploma bears date May 11th, 1859.

Thomas Little, M.R.C.V.S., North Cave, Yorkshire. His diploma bears date February 27th, 1867.

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Communications and Cases.

THE RECENT OUTBREAK OF SPLENIC APOPLEXY IN LINCOLNSHIRE.

By D. Gresswell, M.R.C.V.S., Louth.

In compliance with your request I will endeavour to give you the history of the alarming outbreak of splenic apoplexy which occurred at the farm of W. N. Mason, Esq., of Rigsby, near Alford, on February 16th, 1878.

On February 15th, 6 p.m., the animals were left in their accustomed health by the "garthman." Next morning, 6 a.m., the garthman found one cow dead, shortly afterwards another, and yet a third. He accordingly sent for Mr. Richardson, of Alford, who attends Mr. Mason's stock, and as Mr. Mason was from home, he telegraphed for me.

I arrived at 11 a.m. the same morning and found seven dead, three also died while I was there, and in about two hours several others were failing. Twenty-three of the animals died that same day before 5.30 p.m., and forty-four were dead before Sunday at noon. Three others lingered a day or two, and the last died on Tuesday morning. One only, a yearling, escaped of forty-eight cows, heifers, and yearlings.

Experience had taught me the great value of the sulphites in these cases, but as the telegram gave me no indication of the nature of the disease I was not prepared for the administration of medicine. I accordingly ordered the animals to be turned out to grass for a few hours into a field adjoining the crew-yards until the above medicine could be obtained. I

sent it by the next train; but so rapidly did the animals fall off, that in point of fact they received no treatment.

After careful observation of the symptoms and of three *post-mortems*, I concluded that the animals had died of splenic apoplexy. This view has been abundantly confirmed by the researches of Professor Duguid, of the Brown Institution. There were twenty-seven other beasts in adjoining crews in the same yard, but as yet they have not been affected.

The food of the forty-eight beasts consisted of barley-straw, barley-chaff, three pounds of cake per day (half cotton and half linseed), one foddering of hay and one scuttleful of brewers' grains to four scuttlesful of chaff. It is to be noted that their last feed of grains on February 15th was the first they had of porter-grains. The twenty-seven other beasts had the same food and water with the exception of the grains.

On March 5th fifteen bullocks, in two crews, at the off-farmstead (about half a mile from the homestead) were left in the evening in apparently perfect health, but next morning the garthman found one dead, that is, eighteen days after the first outbreak. The *post-mortem* examination of this beast, combined with the increased temperature of the rest, afforded unmistakable evidence of splenic apoplexy. These beasts had been fed on barley-straw, barley-chaff, and five pounds of linseed cake per day, but no grains were given in the food. They were immediately put upon the sulphite treatment, with bran mashes, cake and turnips; no chaff or straw was given, and the elevated temperature gradually subsided and no further loss was sustained. I think the question naturally arises—Did these beasts become affected in consequence of the same cause as the others? For instance, was the contagium of the disease conveyed by the garthman from the animals at the home-yard to those at the off-yard? It is possible, perhaps, for he attended to all the cattle at both yards. But if this be so, how is it that he did not carry contagion to the other twenty-seven beasts at the home-yard? and the only solution of this problem that presents itself is the fact that the garthman had ready access to the pond drinking water at the off-yard, but not at the home-yard.

On March 8th instant I received a telegram from Mr. Mason asking me to meet Mr. Cope, Chief Veterinary Inspector of Her Majesty's Privy Council, and Professor Duguid, of the Brown Institution, sent down by the Royal Agricultural Society. I then found the temperatures of the remaining fourteen bullocks lower than they were on March 5th, and since

that they gradually fell to the normal standard, and I trust Mr. Mason is now secure from further loss.

I now will describe the general symptoms and the *post-mortem* appearances that I observed in this outbreak. Pulse, 100 to 120, feeble and thread-like. Temperature, 103·5° to 104° F. Considerable tympanitis. Trembling, blowing. Eyes blood-shot. Diarrhœa, with bloody fæces. Staggering, reeling. Dull and dejected look. Soon the animals fell, slavering, moaning, struggling, and quickly dying.

Post-mortem.—The carcases were in good-holding stock condition. On opening the abdomen and taking off the abdominal walls and ribs of the right side, the rumen and maniplus were found gorged with food; the rumen was distended with gas. Blood extravasations of considerable size existed on the surface of the stomachs, about the spleen and kidneys, and under the capsule of the liver; also in and about the mesentery and on the internal surface of the intestines; also on the upper part of the pericardium and the auricles of the heart. Ecchymoses existed in the ventricles of the heart, on the intestines, and costal pleura and diaphragm, as black spots, varying from the size of a pea to that of a shilling. Blood black and giving off gaseous matter, indicative of decomposition. Lungs inflamed, dark on section. Mucous membrane of trachea and bronchial tubes much inflamed, their lumina filled with bloody froth. Spleen of one animal weighed about 8 lbs., another about 14 lbs., of two others about 20 lbs., and the capsule lacerated in some. On opening the stomachs the epithelium was of a purple colour and easily peeled off from the first three; the exposed surface was congested; the lining of the last stomach was much darker in colour than usual.

Mr. Mason's farmstead is situate on a slope of the Wold Hills, about two miles west of Alford. It is high, dry, and well sheltered. Crews and cattle-sheds large, well bedded, and clean; the animals apparently were doing fairly well; but the water was bad and the grains mouldy and in a rapid state of acetous fermentation. My impression at the time was that this decomposing condition of the grains had set up the same condition in the blood of these animals.

As a result of elaborate research at the hands of noted men, it is agreed that putrefaction is but stinking fermentation, and that all putrefactions and fermentation owe their *vera causa* to organic forms. Now, do the phenomena, as presented to us in cases of splenic apoplexy, owe a similar cause? The blood of animals affected with this disease contains innumerable numbers of rod-like bodies, the so-

called bacillus, to which systematists now allow a place among the lower fungi. The question at issue is—Are these so-called bacilli merely contingent on the disease, or are they the true cause whence flow, directly or indirectly, the phenomena observed?

A decided answer it is difficult to give, for while some maintain that blood not containing bacilli will set up the disease, others maintain that the bacilli are essential, whereby to effect experimentally the inoculation of splenic apoplexy. Others, again, admitting the position of the above, assert that it may be impossible to discern the germs of bacteria, and hence that the question must yet remain an open one. This affection seizes upon old and young, lean and fat, high bred and low bred, bulls, bullocks and cows, equally. But there are exceptions; for instance, an outbreak of splenic apoplexy occurred at the farm of Mr. Briggs, of Calcethorpe, last summer. Six cows died, while the suckling calves were not affected. The outbreak occurred among a herd of fourteen cows. I quickly put the rest on the sulphite treatment, and the progress of the disease was arrested. Here, again, the value of the sulphite treatment is notably well seen, for besides the cattle there were sixteen cart-horses in the same field; five of them died in two days, while the others were quickly put under the sulphite treatment and the disease was rapidly arrested, and this in spite of the high temperature, 105° F., observed in several of them. In these horses the amount of yellow, jelly-like lymph effused around the throat, reaching from the jaws to the breast, was enormous, and must have amounted to several gallons. The lungs were black. The trachea and bronchial tubes contained a frothy spume, and their mucous membrane was of a purple hue. The spleen was very large and the lining membrane of the stomach and that of the intestines was highly inflamed, but there were no hæmorrhagic extravasations or ecchymoses.

Again, Mr. Kirkham, of Biscathorpe, annually from one field lost four or five of his cattle, but on administration of sulphites the disease was rapidly arrested; and I have obtained similar evidence of the value of the sulphites in many other cases. The essential nature of this disease is yet a mystery. The conflicting evidence as to the part played by bacteria is yet unsolved, though we know that bacteria in all cases accompany its manifestations; in fact, a thoroughly scientific investigation is yet needed. In regard to preventive measures much may be done in the avoidance of decaying or fermenting food, and of water polluted by cess-

pits or manure washings; in change of locality; in destroying the contagium of the disease by the addition of quicklime to the land. And in regard to our present curative means the facts above communicated speak highly, I think, in favour of the sulphite treatment.

[Referring to the cases of splenic apoplexy published in our last number, Mr. Hutchinson writes us:—"I am glad to tell you that no more deaths have taken place at Walton-le-Dale since I wrote you, now five weeks ago. I should have given you this information earlier, but waited for the reports of the analysts.

"Nothing deleterious was found in the food, but the water, though seemingly pure, was pronounced to be very bad, being highly charged with organic matter.

"I may mention that one of the farm servants who assisted in dressing the carcases has been very unwell (though now happily recovered) from what the medical man in attendance pronounced to be blood-poisoning."*—Eds.]

COMMENTS ON THE LATE TRIAL.—SMITH *v.* WILLIAMS.

By Professor Walley, Principal of the Edinburgh Veterinary College.

Much as I deprecate paper controversy, I am compelled very reluctantly to refer to the remarks made by Professor Williams at the meeting of the Lancashire Association on the 5th ultimo, as reported on page 184 of your last issue.

Professor Williams, in alluding to the late pleuro-pneumonia trial, refers to himself as a victim to the law, and, further on, says that he found "at least one animal suffering from pleuro-pneumonia;" and after referring to the fact that "three other veterinary surgeons saw the cow, and came to the conclusion that she was suffering from pleuro-pneumonia," he says "two professors, however, said the disease was not pleuro-pneumonia." As I am one of the two professors referred to, I will supplement the printed reports

* At the adjourned inquest relative to the death of the butcher, Wm. W. Bell, from supposed *blood-poisoning*, published as an *addendum* to Mr. Hutchinson's cases, p. 145, the Coroner, in summing up, said the medical evidence given on the last occasion was conclusive as to the cause of death, and there could be no doubt that the diseased bullock the deceased dressed was the cause of it. The point to be settled by the jury was how far Mr. Still or his foreman was aware of such disease, or if they knew of it at all.

The jury, after some deliberation, returned a verdict "*Death from blood-poisoning*, caused by dressing a diseased bullock there being no evidence to prove that any one was aware that the disease' existed."

which have appeared of the case—which, by-the-bye, are very meagre, and give outsiders very little chance of judging as to the merits of the question at issue—by briefly detailing its history so far as I am concerned.

On the 29th May, 1877, I was asked by the pursuer (Smith) to go to the City abattoir to inspect the carcases and lungs of two cows, his property, which had been condemned by the county inspector as suffering from pleuro-pneumonia, as to the existence of which disease he had his doubts. Moreover, he expressed the fear that as his brother-in-law had been heavily fined in a similar case, he also might be mulcted in damages, and he wished to protect himself. As a professional man I had no alternative but to accede to his request, and on my arrival at the slaughter-house I found Professor Williams and his assistant (Mr. Johnston) there, and accompanied them to the booth in which the carcases were hanging. After looking at the carcases and finding one healthy, the other the subject of old pleural adhesions with miliary tubercle, I walked across to a cow's lungs suspended by a hook from the wall, and on proceeding to examine these, Professor Williams said, "I don't dispute these, Professor Walley, they are healthy; these—(pointing to some lungs lying on the floor)—are the lungs about which there is any question."

The lungs referred to were carefully and anxiously examined by me, and after finishing my examination I observed, "I see no sign of pleura-pneumonia about these; it is an old case of tubercle, pure and simple."

Whereupon Professor Williams remarked, "I do not assert that there is pleuro-pneumonia, but that there has been pleuro-pneumonia about four or five months ago, and that it was the cause of the tubercle." My answer was, "Whatever disease there may have been there four or five months ago I do not pretend to say, but I do not see any sign of pleuro-pneumonia having existed even six months ago."

This conversation took place in the presence of several witnesses, and I had no alternative but to give a certificate in accordance with what I had seen.

It must be remarked that I had no idea at this time of there even being a probability of an action of damages being raised against Professor Williams; in fact, the pursuer was in dread that an action would be raised against him.

After my examination was completed the pursuer said, "I shall telegraph to Professor McCall." He did so, and I can safely say that when that gentleman examined the lungs he had no idea as to the nature of the question at issue. His

verdict was, "One set of lungs healthy, the other showing tubercle of very old standing." And on being asked by the pursuer if there was any pleuro-pneumonia, he unhesitatingly answered, "None."

The pursuer then said to me, "I will obtain yet another opinion on the case," and he telegraphed to Mr. Robertson, of Kelso, who on his arrival was equally as ignorant of the question at issue as was Professor McCall. Mr. Robertson, owing to *post-mortem* changes, would not give an opinion on the condition of the healthy lungs; but after carefully examining those which were diseased, he gave a certificate to the effect that there was no pleuro-pneumonia, but that there were extensive tubercular changes.

At the trial I simply confirmed the opinion as embodied in my certificate, and made my evidence, so far as I could consistently with my own position, favorable to Professor Williams' case.

Professor Williams endeavoured to show that although the one animal had suffered from pleuro-pneumonia some three months ago, it was still in a condition favorable to the dissemination of the virus; and he tried to strengthen his position by asking his senior advocate to call my attention to my own published opinions on this question, and to the subsequent remarks of Professor Ferrein (as published in the *Veterinarian*).

As to the evidence brought forward in support of Professor Williams' case, I make no comment upon the *ante-mortem* opinions, as he would be a bold man who asserted that he had never made a mistake in the diagnosis of pleuro-pneumonia; but I do say that it was a most remarkable proceeding for three professional men to get into a witness-box and swear that they could say positively from a section of a rib, to which was attached pleural adhesions, and which had been in spirit for some months, that the animal from whose carcase it had been removed had been the subject of zymotic pleuro-pneumonia, two of the witnesses failing to see any tubercle, the third saying that he distinctly saw tubercle therein.

In conclusion, I have only to express my regret that the lungs, although placed in whiskey at the time, were so far neglected as to become decomposed, thus doing away with the possibility of those who are interested having the opporttnity of examining them for their own satisfaction, and also to say positively that there was no sign of disease of any kind in one set of lungs, and that the others evidenced tubercle only of many months' standing.

COMMENTS ON PROFESSOR WILLIAMS' OBSERVATIONS AT THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION MEETING.

By Professor McCall, Veterinary College, Glasgow.

It is with reluctance that I take up my pen to reply to Professor Williams' remarks made at the recent meeting of the Lancashire Veterinary Medical Association anent the jury trial, in which he was defender, and I was one of the "two professors" cited to give evidence in connection therewith; and indeed would not do so, but that Professor Williams impugns my testimony. His statement is that he was sued "for the value of *two* cows he ordered to be slaughtered when they were suffering from pleuro-pneumonia;" that the case was decided against him "on a point of law;" that three veterinary surgeons and himself "found" pleuro-pneumonia, while "two Professors" found none; the fair inference being that he and the three veterinarians were right, and but for the "point of law" he would have been successful in his cause, and that the "two professors" were wrong.

Leaving out of view the slight inconsistency of the statement that "he ordered *two* cows to be slaughtered when they were suffering from pleuro-pneumonia," with the additional statement six lines further down that "he found at least *one* of the animals to be suffering from pleuro-pneumonia," I shall just lay a plain narrative of the *facts* before my professional brethren, and let them judge for themselves if my opinion was justified or not. With whether or not the case was decided on "a point of law" or the conduct or merits of the case I do not propose to deal.

In the month of May last I received a telegram in Glasgow requesting my immediate attendance at the slaughter-house, Edinburgh, to which I replied, fixing the time. At the hour appointed I appeared, and was requested by a Mr. Dunn and Professor Walley to examine the carcases, &c., of two cows which were pointed out to me by them, and to state the disease or diseases under which the animals had laboured prior to being slaughtered. I accordingly proceeded to do so, and after a careful inspection of the bodies and a minute examination of the lungs, including the testing of these organs as to their density, resulting in the floating on water of both lungs as a *whole*, and in *sections* of various sizes, as well as the recording of the whole appearances and results at the moment in my note-book, I

communicated to the parties present that the one animal had been affected with chronic tuberculosis, and that I had failed in detecting any traces of diseased action either in the viscera or carcase of the other.

Professor Walley then said, "Please look again and see if you cannot discover traces of zymotic pleuro-pneumonia." I did so, but was again forced to declare tuberculosis and tuberculosis only to exist. *Up to this point* I knew nothing of the particulars of the dispute nor the names of the parties disputing; nor had I the most remote idea that Professor Williams was mixed up in it. Such is the history, and now as regards the disease. Tuberculosis, I regret to state, is a common disease, not only in the dairy cows located within the byres of this city, but also in lean old cows which are daily brought into the Clyde from Dublin, Belfast, and other Irish ports, to be used as "minced meat." And, as it falls within the range of my official duties to deal more or less with the carcases of all such animals and those that may be affected with zymotic pleuro-pneumonia, not only as to their fitness or unfitness for human food, but also as to the amount of compensation to be paid for animals *slaughtered by order* of the local authority of Glasgow, I have a wide field for the acquirement of theoretical and practical knowledge bearing upon these two diseases, either singly or conjoined. In the *living subject* it requires great care and considerable experience to distinguish some cases of tuberculosis from zymotic pleuro-pneumonia, and even then, as I stated in my evidence before the whole Court, the two diseases may be confounded and mistaken the one for the other. But I would also have been bound to have admitted, had I been asked, that in the *dead subject*, allowance being given for a proper examination, it is not so, and I incline to the opinion that there are few veterinarians of experience who would consider themselves *flattered* by being told that they cannot distinguish the lesions of tuberculosis from those of zymotic pleuro-pneumonia, or tuberculosis conjoined with pleuro-pneumonia.

I feel that I should apologise for the trouble I give in asking you to find a place for this communication in your next issue.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 133.)

3. *Dandelion.*—Of this plant Dr. Syme gives three engravings, with names as follows;

Taraxacum officinale, var. *genuinum*—Common Dandelion, *var. a.*
" " var. *erythrospermum.*—Common Dandelion, *var.* β.
" " var. *palustre.*—Common Dandelion, *var.* δ.

All these forms are exceedingly common, and there is reason to think that they may all be grown from any single individual; indeed, Dr. Koch states that he has obtained all the forms that have been distinguished as species from the *T. palustre.*

They agree in their handsome yellow heads of flowers rising on a smooth fistulose scape, the peculiar runcinate leaf, the divisions bent downwards reminding one of the shape of the canine teeth of the lion, and hence the common name from Dent de Lion, commonly called by our rustics Dandy Lion. Another character is that of its thick succulent root-stock. The whole plant, scapes, leaves, and roots exude a thick milky juice on being broken, and it is from this that the active principle *Taraxacin* has been derived, and for the production of which old roots are usually obtained, as they contain it in the largest quantity. It follows then, as the plant is used for medicinal purposes, the older roots are preferred without reference to varieties, and the digger of the plant will take the longest roots where there is choice as being the most profitable to him.

The following general facts connected with the plant are stated in so popular a form that we cannot forbear to extract them. "The dandelion is such a common weed throughout Britain that there are few persons unacquainted with its appearance. It is a perennial with a long tap-root, from the crown of which spring a number of smooth leaves, deeply cleft into opposite-jointed segments, which are all directed backwards. The flowers are placed upon a hollow leafless foot-stalk, are very large, and of a beautiful golden

yellow. It flowers all the summer and autumn. It is one of our most beautiful native plants, and, if not so common, would doubtless be highly valued, but is one of the most troublesome weeds in the field and garden.

"The whole plant contains a milky juice, possessed of diuretic, tonic, and stomachic qualities. It has been long employed in chronic disorders of the digestive organs, and especially of the liver. It is also sometimes given in dropsy. In Holland it is a common remedy for the intermittent fevers and agues so prevalent in that marshy country.

"The root is the part medicinally employed. It is taken up about midsummer, and only those of several years' growth are of much value, as the active principle is contained in but small proportion in the young plant. The plant is so abundant that the demand is readily supplied by those in the wild state. The medical properties of the root are dependent upon the presence of an alkaloid called *taraxacin*. The roots are largely used in Germany as a substitute for coffee, being first cut into small pieces, dried by artificial heat, and slightly roasted until they acquire the tint of coffee, when they are ready to grind for use. For this purpose it is better to take up the roots in the autumn. In this country dandelion coffee is occasionally taken for medical purposes, but it is generally mixed with true coffee to give it a better flavour. The ground root is sometimes mingled with chocolate for similar purposes.

"The young leaves of the dandelion are an agreeable and wholesome addition to the spring salad. They are eaten commonly in France and Germany in that manner, though but little used here. It is said that the people of Minorca, during a famine caused by the devastations of the locust, lived chiefly for many weeks upon the leaves and roots of the dandelion. The roots contain some sugar and gum, and a large quantity of inulin, a substance analagous to starch. A kind of beer is obtained by the fermentation of the plant in Canada, where it is nearly as common as it is here. The leaves in the green state are very bitter, but may be easily blanched by earthing up, when they become delicate and palatable.

"The dandelion is a very common weed in all pastures and meadows, and is liable to do injury to the grass around it, by abstracting nutriment and covering it with its spreading leaves; but the latter are considered rather beneficial to cattle, and are said to increase the milk of cows when eaten by them. The names of the plant are derived from the form of the tooth-like segments of the leaves, the

common English one being a corruption of the French Dent-de-Lion."*

The use of the blanched leaves as a salad herb are greatly extending, and hence they may be procured from all the best fruit and vegetable shops in London and other large towns. They are quite as pleasant as lettuce, and their value as an antiscorbutic is undeniable; and it is, perhaps, on this principle that dandelion tea was so much used by our forefathers, it being all the more necessary to them, as, before the stall-feeding of animals became the vogue, salted meat was the common food of the people; then the whole family of plants we have now under consideration as *salsafy*, *scorzonera*, *dandelion*, and *lettuce* were all considered of importance as purifiers of the blood.

It remains to notice a common use to which the plant has been put from a very remote period, especially in the country. The head of seeds with its expanded pappus may be said to be the child's clock. How often in our younger days have we blown these seeds about to ascertain the time of day. True, such clocks were not always accurate, but then it was easy to repudiate it as a bad one, and probably our watch was not always right. We once travelled with a friend who pretended to tell the time of day by the position of the sun, but as his watch was an hour too slow, so it was ascertained that our time was an hour slow also. We fear that by this action we often much increased the spread of a weed which we may note is one of the very first to take possession of any bit of soil capable of nourishing a plant at all, this propensity to travel of its "winged seed" being doubtless the reason why the dandelion is a common weed all through the United States, into which it was doubtless first introduced by its European settlers. It is a troublesome weed in lawns, and as it often perfects its seeds in a few days, negligence in constant mowing is a common source of its increase.

4. *Lettuce.*—Dr. Syme gives us four native species of the genus LACTUCA, so named from its milky juice. They are:

Lactuca virosa.—Strong-scented Lettuce.
„ *scariola.*—Prickly Lettuce.
„ *saligna.*—Least Lettuce.
„ *muralis.*—Ivy-leaved Lettuce.

The two first are included under one head by Mr. Bentham, viz. *L. scariola.* This we used to meet with very sparingly in the hedgerows about Norwood, and our notion some forty years ago was that probably it had be-

* 'The Useful Plants of Great Britain.' By C. P. Johnson, pp. 145-6.

come a settler from some of the garden forms. Speaking of the cultivated forms, Mr. W. B. Booth has the following remarks:

"The garden lettuce, commonly called *L. sativa*, is a hardy annual whose native country is unknown with certainty, although it is generally supposed to be Asia. It has been cultivated in England since 1562. The plant has large, roundish-oblong, entire, slightly-toothed milky leaves, which in some varieties are of a deep green, while in others they are of a dingy brown colour. The flower-stem is round, about three feet high, the flowers pale yellow and corymbose. Lettuces appear to have been known and used for salads at a very early period. According to Herodotus, they were served to the royal tables of the Persian kings more than 400 years before the Christian era. It is also recorded that they formed the opium of Galen, the celebrated Greek physician in A.D. 200, and it was probably the consideration of this historical fact which led to the discovery in our day, by the late Dr. Duncan of Edinburgh, of the drug called *Lactucarium*, prepared from the juice of the lettuce. The ancient Romans knew but one sort of lettuce, and this was a variety with dark-coloured leaves, which they suspected of having an injurious effect on those who ate it; but after the Emperor Augustus was said to have been cured by the free use of lettuces, suspicion of their deleterious qualities vanished, and great efforts were made not only to cultivate them, but to blanch them so as to remove their bitterness, and thus render them more palatable. The first English writer on gardening who has noticed the lettuce is Gerarde in 1597. He describes eight varieties as being then cultivated. The number has since greatly increased, and year after year new and improved sorts are brought forward to supply the places of those which have degenerated and are considered unworthy of further cultivation.

"The whole have been arranged in two divisions or groups, namely, *cabbage lettuces*, comprising all those which have round leaves and form a compact head resembling a cabbage; and *cos lettuces*, those having firm and crisp upright oblong leaves, folded over one another. The latter are preferred for salads, while the cabbage kinds, from being more flaccid and milder, are preferred for soups, although containing but little nourishment.

"Lettuces are universally esteemed for their emollient and cooling properties, and they are always in great demand."*

* 'The Treasury of Botany,' p. 655.

Lettuces are most salutary herbs; they are mostly eaten raw, either by themselves with salt or as dressed salads. They are very good stewed or used as one of the herbs in Julien soup. The avidity with which all classes take lettuces of different sorts as summer advances is an evidence of their quality, and this is further attested by the fact that seedsmen seem to vie with each other in bringing out new and distinctive sorts. These are now so varied that it would be difficult to recount their names; they are, however, capable of being referred to under two very distinctive heads, all those being called 'cos' lettuces that have an upright method of growth, while the "cabbage" forms are those that form rounded, compact hearts; amongst the latter the sweet little lettuce called "Wheeler's Tom Thumb" is distinguished by its leaves wrapping up tight as a tennis ball, while its seeds are perfectly black.

5. *The Sow Thistle* is everywhere so well known as not to need description. We have two distinct species, of which are—*Sonchus oleraceus*, the common Sow Thistle; *Sonchus arvensis*, the Corn Sow Thistle. The first is a biennial plant, while the second has no perennial root-stock. The first, too, is the common denizen of the garden, while the other is almost confined to the farm, where it is often a great pest in the arable fields. They are both of them weeds of a mischievous kind, as they take up much room, to the hindrance of the growth of the crop. Still our children delight in them; nothing is so good as either sort of sow-thistle for feeding the pet rabbit. For this purpose they are safe, as seldom leading to evil consequences, and the avidity with which these creatures and, indeed, most farm animals attack them is an evidence of their value. The hog demolishes them with the greatest appetite, and hence the common name by which they are known. They were formerly eaten in salads and even boiled as pot-herbs, but the quicker growing and more easily managed lettuce, which answers every purpose, has completely thrown the ancient sow-thistle into the shade.

On reviewing the uses of this order of plants, namely, the Compositæ, whose history we have so far completed, we would remark that, though some of them have been esteemed as active remedial agents, yet none of them will be found in the Veterinary Pharmacopœia; at the same time we may remark that, as some of the species are so widely scattered as to be found in every natural meadow there is reason to think that they exercise a most salutary influence upon the animals that depasture upon them. There is a great dif-

ference between natural or permanent pastures and artificial or shifting grass crops; the former makes the best hay, and its herbage is for the most part more agreeable and nutritious to the creatures feeding upon it. This is, doubtless, due to the admixture of a wider range of herbs than will be found in artificial pastures, and among these we may enumerate very many of the Compositæ, some member of which will be found in every meadow; but we scarcely know of a single species that is not readily eaten by cattle, and the group that we have just examined may be said to be as wholesome to the inferior as to the superior animal.

REMARKS ON MR. J. W. HILL'S CASE OF RHEUMATIC CHOREA IN THE DOG.

By J. M. Storrar, Assistant-Demonstrator Royal Veterinary College.

In the February number of the *Veterinarian* Mr. J. W. Hill, of Wolverhampton, records a case of rheumatic chorea in a fox terrier dog. After briefly stating the ordinary symptoms of chorea, so commonly the sequel of distemper, he gives the *post-mortem* appearances, which he admits revealed little of consequence, there being no evidence of endocarditis, no valvular deposits, nor any of the characteristic lesions of rheumatic affections. The only part he mentioned as showing any indication of inflammation was the lower portion of the mitral valve, but he evidently attaches much importance to the presence of what he terms an *ante-mortem* clot, and would lead the reader to infer that such gave rise to all the premonitory symptoms, and was the ultimate cause of death.

Was the coagulum found in the heart an *ante-mortem* clot? is a question raised in my mind by a recent *post-mortem* examination, made a few weeks ago in company with Professor Axe.

It is not uncommon to find such clots as Mr. Hill describes in the hearts of animals which have died from anæmic disease, as being formed by the action of the valvular cords on the blood during the irregular cardiac movements which take place immediately preceding the death of such animals.

Had not such a case been recently brought under my notice, I should probably not have thought of making any comments on Mr. Hill's case, but as it was one of quite a different character, producing almost exactly the same *post-mortem* lesions, I will briefly give the history of it:

About the middle of February a small four-year old Chinese terrier dog was brought into the Infirmary suffering from an affection of the brain. It was supposed to have hurt itself by falling out of a window about a month previously, as shortly afterwards it exhibited symptoms of pressure on the brain, and when admitted kept constantly walking round and round always in the same direction. The dog was partially blind, ceased to eat or drink anything, and after being in the infirmary for some days, became so emaciated and weak that it was considered advisable to relieve him of his suffering by administering a few drops of hydrocyanic acid.

I cannot say that the *post-mortem* examination showed sufficient to account for all the symptoms, there being very little effusion on the brain. The viscera were all in a healthy state, including the heart, in the left ventricle of which, entangled in the chordæ tendineæ, was a coagulum about an inch in length, of the thickness of a goose-quill, prismatic in shape, of a pearly-white colour, firm fibrinous consistence, and extending from the free margin of the valve to the apex of the heart; in fact, answering in every detail to the engraving illustrative of Mr. Hill's case, and to the description given by him.

In opening the ventricle the coagulum was accidentally cut in two, so that there are apparently two clots, but in reality only one divided into two portions.

I point to this case, which was quite different in character, and in which the *post-mortem* appearances were an exact counterpart of those described by Mr. Hill, and I leave the readers to judge whether they think the so-called *ante-mortem* clot was not in reality one of those decolorised fibrinous coagula found in the hearts of numerous animals which have died the victims of anæmic disease.

OBSERVATIONS ON DISLOCATION OF THE SHOULDER-JOINT.

By J. Gerrard, M.R.C.V.S., Grantham.

I have no wish to be dictatorial or to try to throw in the "apple of discord" among your editorial committee, or the *literati* of the profession, but I humbly submit that I think it would have been better to have published my remarks and allowed your readers to form their own conclusions as to whether they were *assertions* or facts "wide of the point at issue," or even "intemperate," rather than criticise and

condemn me from your editorial sanctum without being heard.

I hope, however, that I am grateful for the anxious solicitude you express regarding my reputation, but I would have preferred to be judged by my compeers rather than an editorial clique.

Since, however. you seem inclined to hold out the "olive branch," and to show you that I can reciprocate your euphemistic compliment, I shall send herewith a bone, not a "bone of contention," I hope, but a morbid specimen, with its history, which may be interesting to your readers and instructive to your pupils.

I am induced to do so from the fact that your January number contained a very concise and successful case of a rather unusual lesion, viz. "dislocation of the shoulder-joint" in a horse, by T. W. Butler, M.R.C.V.S., Evesham; and which the specimen I send you will illustrate the pathological condition that was, and sometimes is, mistaken for such a lesion by some knowing ones.

I regret that the specimen is somewhat mutilated and not so complete as could be desired; this was done by the knacker and the owner in their haste to get at the joint to verify their opinion that it *was out*, and had cut through the *flexor brachii* or *scapulo radialis*, where it passes over the bicipital groove of the humerus, and to which it was adhering.

The subject, an eight-year-old, fair sized and healthy cart-mare. Had been regularly worked, without showing any signs of lameness, until the morning of the 9th of October last, when she was found slightly lame on being turned out of stable for work. At first the lameness was slight, but was such as necessitated her being returned to the stable again, and when I saw her on the afternoon of that day there was neither swelling nor mark of any kind to indicate the seat of lameness, but slight tenderness in front of the shoulder, with a dragging action of the limb, which on being advanced described the segment of a circle. Thinking it an injury of some kind, either a kick from some of the others, or that she had run against some of the posts in the "crewe yard," I ordered warm bathing and some simple liniment, with a mild aperient.

Three days afterwards, finding no improvement, I put on a smart fly-blister, which acted well but with little effect, and at the end of ten days she was sensibly worse, scarcely able to walk at all, the shoulder very tender to the touch and slightly swollen, with all the symptoms of inflammatory

fever well marked. Thinking it rather a severe case, and likely to exhaust the animal, I put her in slings, which had a beneficial effect in moderating the fever. In these she rested well for eight weeks, when she began to bear slightly on the injured limb, and the owner thought she should be tried to walk. She was accordingly moved out of them and could walk, although very badly.

From the irritation and disuse of the limb, the scapular muscles were badly atrophied, which gave to the diseased shoulder a very prominent appearance, which induced the belief among the village worthies that "the shoulder was out." This opinion gained ground, despite all the eloquence and explanations I could muster, and reached a climax when the father of the owner, who resided at a distance, came to visit his son. He soon decided that "the shoulder was out" and had been out all the time, so one of those parasites of the medical profession, the "bone-setter," was consulted, who of course had no difficulty in determining the matter, and set about reducing the displaced bone. This was done, as I learned afterwards, by throwing the mare on her side; how they did it I do not know, but they tied a rope round the fetlock of the dislocated limb, and attached another horse thereto and pulled her about the yard, but no reduction could be effected. It could not even be made "to crack," which is generally regarded by that fraternity as the *coup de grace* of all such conditions.

As no benefit was experienced from this treatment she was turned out into a grass field to shift for herself, where she was found down one morning, and not being able to get up, the knacker finished her off, and I was requested to attend to get a demonstration of a dislocated joint. Before I could attend, the dissection was over, but it convinced them that there was no dislocation, and I could show them most conclusively, by exposing the other shoulder-joint, that there never had been any. The "flexor brachii" was firmly adherent to the bicipital groove and to the upper third of the bone, but they cut it clean away in order to expose the joint, which was quite healthy, as you will observe.

Now the point to which I wish to direct attention, and on which I should be glad to hear your opinion, is whether this diseased condition was the result of a severe injury inflicted by a kick from any of the other horses; by striking against some of the posts in the crewe yard when running at some of them, as this animal was the chief of the team; or whether it might not have arisen from causes

originating within the bone or bursæ themselves? This latter condition we frequently meet with in old cart-horses in these fens, generally of a rheumatoid nature, are very bad doers, and give other indications of this diathesis, such as did not exist in this case. Still, the slight lameness at first, the absence of any external mark or swelling, the increasing severity of the lameness, together with the bony adhesions favour this supposition. But the fact that the scapulo-humeral articulation was perfectly free from any bony deposits is rather against the latter supposition, and points pretty conclusively to an injury such as I have indicated, or a simple sprain of the flexor-brachii and inflammation of the bursæ. If the latter, arising as it usually does from a false step, it shows what great effects sometimes arise from very trivial causes; and if induced by a heavy blow, suddenly inflicted, it shows what a tremendous force is necessary to cause dislocation of this articulation, and the case recorded by Mr. Butler, shows that even dislocation may be effected without the bursæ being injured or such a diseased condition, as I have described, supervening.

Dislocation of this joint, from before backwards, I could scarcely believe possible until I saw the record of Mr. Butler's case, which puts it beyond a doubt, and for the record of which I am grateful.

I had a case of dislocation of this joint in a heifer last summer, but it was dislocated inwards, and was caused by the other animals during the oestral period. I had some difficulty in deciding whether it was a fracture of the humerus or a dislocation. It was characterised by great lameness, but no swelling, rather a deficiency below the point of the shoulder or about the middle of the humerus. After some manipulation and twisting of the limb, I could hear a kind of low grating noise, which I thought indicated a fracture, and as nothing in the way of splints or bandages could be applied, I let her up, when, to my surprise, she scampered off as if nothing had been the matter. She was slightly lame for a few days, and during the next oestral period the same lesion occurred, only rather better marked, and the owner had her killed, when I had an opportunity of examining the joint.

The ligaments and synovial membranes were all intact, but had a relaxed appearance, and scarcely any effusion or abrasions to be seen.

The most commonly observed form of dislocation of this joint in cattle is from within outwards, and even this is very rare; while in the horse one could scarcely believe it

possible from the structure of the joint and the powerful muscles and tendons by which it is surrounded.

Dislocation (pure and simple) in whatever form is sufficiently rare, to warrant its being recorded, and this fact must form my apology for so far intruding upon your space with what may seem to many a very simple case. Sprains and injuries of this articulation are comparatively frequent, but they are often complicated so as to make a correct diagnosis rather difficult sometimes, and any facts or observation bearing on the subject deserves a careful consideration from all who would aim at greater exactitude. As a rule, dislocation of this joint is marked by sudden and extreme lameness, indeed, progression is impossible, while fracture is characterised by the tender swelling in addition to the lameness, and if seen in the early stage probably crunching of the fractured bone may be heard. But even excessive lameness and swelling may coexist, and neither fracture nor dislocation present, and these are the cases that puzzle even the most experienced practitioner, and can only be determined by their individual history when it can be ascertained.

[The condition of the upper extremity of the humerus, including the tubercles and grooves in which the tendon of the flexor brachii runs, showed that it had suffered from ostitis deeply seated, as well as from marked periostitis. As all soft parts, however, had been removed, it is difficult to decide on the original seat or the exciting cause of the mischief; but the general appearance of the bone would lead to the belief that the inflammatory process had resulted from external injury. The articulatory surface at the head of the humerus was healthy.—Eds.]

ULCERATION OF KIDNEY OPENING INTO THE ABDOMEN, AND ASSOCIATED WITH EXTENSIVE DEPOSIT OF CARBONATE OF LIME IN THE BLADDER.

By Harry Olver, F.R.C.V.S., Tamworth.

A case of the above-named nature has come under my notice which should, I think, be placed on record, as to me there are some extraordinary features in it. Thinking, therefore, that you might deem it of sufficient interest for the pages of the *Veterinarian*, I send you the particulars for you to use as you may think best.

About *two years ago* I was requested by Mr. S. Hiron, of

Elford Lowe, to visit a cart-gelding which had met with an accident. I found that the horse had fallen in a water cart and lain struggling for some time with one shaft across his loins. He was somewhat feverish, tender to the touch on the injured part, and also suffering from incontinence of urine. My treatment consisted chiefly of the use of laxative and febrifuge medicines, followed by tonics and the application of stimulants over the region of the kidneys. The animal was soon reported to me to be well.

He did his work as usual up to a few days ago, when after a few hours of suffering acute abdominal pain, he died. No professional assistance was sought, and it was by the merest accident that I am now enabled to give the following particulars.

While making a *post-mortem* examination of a horse a few days after the death of this one, the man who had purchased the carcase spoke of an extraordinary stone that he had taken from the bladder of Mr. Hiron's horse. He described it as being of immense size, and said that the walls of the bladder were a quarter of an inch thick, and that the viscus was completely filled by the stone. He added that one kidney in particular was also much enlarged, was not of the usual shape, and was soft in texture, and that after finding this stone he was curious enough to examine this kidney very particularly, when he found a hole passing through its substance, through which urine had apparently found a passage. There was, he said, more fluid in the abdominal cavity than usual, which had a most sickly smell, and I gleaned from him what seems most strange, viz. that on portions of the exterior of the intestines there were concretions of a gritty nature, much resembling the stone in the bladder.

Being much interested by his description I learnt where the animal had been opened, and succeeded in finding the deposit which had been removed from the bladder, and which was as hard and heavy as a calculus. At the time it was removed it weighed seven pounds seven ounces. The exterior was irregular and broken in places, and it seems to consist wholly of sabulous matter, more or less consolidated. On showing it to the man he said it was not so large as when he took it out.

From the owner I learnt that the horse had continued to work up to the last day, but that he had fallen away very much during the previous month, and had in that space of time had several attacks of colic. He also told me that the incontinence of urine had existed from the date of the accident, but did not seemingly interfere with the horse's utility

in any way. Knowing the purchaser of the carcase well (a respectable saddler), I can rely on his statement. Is it, then, possible for the ureter of the diseased kidney, being blocked by sabulous deposits, to lead to absorption or, rather, ulceration of the already diseased viscus, and thus cause a portion of urine secreted by the organ—which probably would be only small—to find an outlet into the abdominal cavity? The history of the case seems to lead to this conclusion, and to the probability that the discharge had been slowly taking place during the month that the horse had been falling away in condition, and had been subject to attacks of colic; and further, that during this time concretions of carbonate of lime had formed on the outer coat of the intestines. If my surmise be correct, it is another proof of how nature will accommodate herself to circumstances; besides which the case is interesting as showing what an amount of irritation and pain an otherwise healthy animal will bear without exhibiting any signs of marked illness.

I send the deposit for your inspection, hoping that you may be able to throw some valuable light on the subject.

[We thank Mr. Olver for recording the above interesting case. The possibility of urine finding its way slowly and in small quantities into the abdominal cavity, without giving rise to active disease of the peritoneum, was forcibly impressed on our minds several years since. We were at that time consulted respecting a foal, about eight months old, which showed almost a total inability to use the near hind leg. On examination incontinence of urine was detected, accompanied with considerable excoriation of the inner portions of the thighs. The animal was much emaciated, and in a condition to show that it would not long survive. It died within a few days. The *post-mortem* examination revealed the singular circumstance of serous exudation mixed with a urinous fluid in the abdomen, the urine having passed through a minute opening in the fundus of the bladder. On searching for the cause of the perforation a large *Strongylus armatus* was found inside the bladder, close to the opening, and curled upon itself beneath the thickened mucous membrane. It was evident that in its wanderings it had penetrated the coats of the viscus, and thus slowly led to the death of the foal. This occurrence dates back fully forty-five years, and it led at the time, among many other instances in our practice, of *colts* dying from various lesions produced by *strongyles* and other helminths, to our attaching great importance to parasitic diseases and to the necessity of investigating the natural history of internal parasites in particular.—Eds.]

ON THE LOSSES CONTINGENT ON BREEDING CART-HORSES.

By J. A. Clarke, M.R.C.V.S., March, Cambs.

It may not be out of place at this season of the year to mention the national loss which annually takes place in one of our great sources of wealth. I refer to the loss of valuable brood mares and their progeny—a loss which ought to be prevented to a large extent, and probably will be as time progresses, especially now that the icy barrier which separated scientists in general from the agricultural mind is fast melting away, and the farmer is no longer slow to the interests of advancement, but begins to do his part to propel the common wheel of progression.

This change is obviously due in part to the advanced educational status of the country, which demonstrates the fact to the observant that one cannot shine in every sphere. Sciences, to be understood, must be studied thoroughly and singly. The farmer also begins to realise the fact that he is dependent on the professional worker to a large extent for the high state of cultivation of his land and the excellency of his herds, and the latter standing at a very high pecuniary value, it follows that mortality arising considerably affects the owner's pocket, and has a marked effect in opening his eyes to the advantages to be derived from the solicitation of professional assistance. Never in the memory of man have horses realised such prices as within the last ten years; and although it is an old and true saying that we should always listen to our elders, yet never was a more fallacious statement made than the prediction of our grandsires that when the iron horse pursued its track throughout the country, our noble steed would settle down to insignificance and become of little value. Happily commerce has kept pace with the construction of railways, and we are able to look on our horses with greater pride than ever, and as a large source of national wealth. This incentive naturally causes all sensible breeders to be more choice in sire and dam, and we cannot but hail with satisfaction the example set by the noble Earl of Ellesmere. This nobleman, more especially for the benefit of his tenantry, commenced some five years since, through his able agent Captain Heaton, to collect a stud of cart stallions and mares, and sparing neither money nor pains, he has now perhaps a stud second to none. His lordship still retains the best as stud horses and mares, but disposed of his superfluous stock a short time ago, realising

high prices, the sum total for the forty-six disposed of amounting to something between six and seven thousand pounds.

Well would it be for the country at large, and more directly for the breeder, if the same interest would awaken in the minds of the large landowners in general. Breeders are well aware they cannot afford at the present time to breed an inferior class of horse, but seem to lack the means for improvement; for if a good young entire horse turns up in a breeding district, with excellent points and the charges are moderate, the consequence is he is overdone with mares, perhaps has 150 or more, and if he does not knock up before the season is over, his procreative powers are soon exhausted, and he leaves but few mares pregnant. But in many cases, where a young entire horse has a large amount of work to do, the attendant thinks it would be very detrimental to his character as a horseman if he did not use his cunning with a view to assisting his horse through his work by the administration of generative excitants, and so habitually administers exorbitant doses of cantharides and other agents, which bring on diuresis and strangury, compelling him to give up his rounds before the season is over.

Then, again, we have the horse of good quality, whose charges are high. He, amongst a few of the most enterprising farmers, gets a fair season; but the majority go on the "once-bitten-twice-shy" principle; because they paid for a foal last year and did not get one, they don't intend to part with much money this year. Now is the time for the low-priced horse; he creeps in and gets plenty to do. He has been reared by the farmer, and refused by one buyer after another. He works on the farm the greater part of the year, and is worth nothing, so his owner can afford to be liberal, takes two mares for £1, and thus we get our sidebones, ring-bones, roarers, shiverers, &c. This leads us to the conclusion that individually there is very little encouragement to keep a valuable animal in one's possession, and consequently in most breeding districts there is a large animal loss through our not making the most use of our mares, by having a proper staff of horses rightly managed, so as to induce people to employ them and to ensure their being stock-getters.

This evil might be remedied by a company of farmers, say twelve, guaranteeing the proprietor of a good animal 80 or 100 mares at £2 or 50s. each, on condition that the horse stands in their district and is entirely at their service. Or a company might purchase a good animal and work it

amongst themselves. One or other of these systems are most likely carried out in certain districts, but are never likely to become general. Let us hope ere long that the matter will become a state question, and that it will be considered an offence against the realm to use an entire horse for stud purposes unless he is licensed, the licence being granted only on producing the certificate of a qualified veterinary surgeon, certifying that the horse is free from hereditary disease. Now that England can no longer compete successfully with other countries in the production of cereals, it behoves us to make the most use of our live stock; and if our large capitalists can only be induced to lend themselves to the matter it would no doubt add to the national welfare.

I must apologise if at first sight I seem to have introduced matter somewhat foreign to your Journal, but should my calling admit of it I intend to follow up the subject during the months of the present foaling season, commenting on the different sources of danger to the breeder, and describe a few picked cases from those which will most probably come in, feeling that a few practical remarks may not be unacceptable to the junior members of the profession who are just launching into practice. Unfortunately for too many very little has been written on veterinary obstetricy until the last few years; and happy be the young practitioner who had the advantage of a practical education, for if he were not so favoured, and only possessed the knowledge he acquired at college, which would be very limited owing to the short period of study (an evil which has now been remedied), in hunting phraseology, he may break his neck at the first stile he came to, or, in other words, he may make such a blunder at the first parturition case he is called to as to take years to efface it from the memory of his client. Fortunately there need not be any more starters in the dark, for with Mr. G. Fleming's admirable work on 'Veterinary Obstetrics,' always at hand, the reader may not only have all his anatomical and physiological knowledge refreshed on the subject, but may learn the opinions, practical and theoretical, of most of the English and Continental authors of import.

In conclusion, I may say that it can only be with extreme satisfaction that the profession learns there is a prospect of a public acknowledgment being made of this great writer's worth to his profession—a profession which is fighting (in this country at least) its *own* battle nobly, and is sure to achieve a most brilliant victory.

(*To be continued.*)

"THE PENAL CLAUSE AND HOW TO OBTAIN IT."

COMMENTARY ON MR. GREAVES' LETTER. By Mr. J. McFADYEAN, Dick Veterinary College.

SIR,—The pages of your last issue contain evidence of an activity of investigation on the part of certain individuals with a view to the advancement of our profession, which must be gratifying to all concerned. Closely associated with this exhibition of activity in the field of inquiry, there seems to be a sudden revival of interest in the affairs of the "Dick College" in quarters where there was least reason to expect it.

It will come as a surprise to most of your readers to learn that Mr. Thomas Greaves, of Manchester, has been snatching moments from a life of arduous professional duties to carry on a series of intricate investigations, and that he has been rewarded by a discovery, the importance of which can scarcely be estimated. I say it will come as a surprise, for, although the name is not absolutely unknown to us, still Mr. Greaves has up to the present time, as a scientific investigator, led a life of comparative obscurity, and this is the first occasion on which he has laid the profession under a heavy debt of obligation.

Mr. Greaves gave publicity to his discovery in an article entitled "The Penal Clause: How to obtain it," which appeared in your last issue. But as in my opinion the announcement did not receive the prominence which it deserved, and might therefore escape notice, I take this opportunity of directing the attention of your readers to it. The announcement extends to one sentence, and is as follows:—"We find that Professor Dick's College was never exalted or endowed by a charter of any description!" This will come as such an overwhelming surprise that it would be vain, until the mind has calmly conceived its full significance, to attempt to discuss the effects which it is likely to have on the institution in question and the profession at large. But there are one or two questions which immediately present themselves to the mind as naturally demanding a solution in connection with the foregoing, and these I would, with all due humility, suggest should next receive the attention of Mr. Greaves.

1st. Who said that Professor Dick's College was ever "exalted or endowed by a charter of any description?"

2nd. Which of the veterinary schools of Great Britain was ever "exalted or endowed by a charter of any description?" and

3rd. What connection has the statement made by Mr. Greaves with the "Penal Clause?"

I hope Mr. Greaves will pardon my having trespassed on ground which by right of primary exploration he may think exclusively his own; but, stimulated to follow his example, I have given the subject some attention, with the result which I proceed to state as concisely as possible:—"We find that Professor Dick's College" as a teaching school is as much "exalted and endowed" as any other veterinary school in Great Britain.

I observe from the same number of the *Veterinarian* that a Mr. Cartwright was present at a meeting of the Midland Counties Veterinary Medical Association, and there delivered an address, which "he could not conclude without expressing his regret that the endowment left by the late Professor Dick for the advancement of veterinary science was rapidly dwindling away." Obviously this is a token of the intense interest and solicitude with which Mr. Cartwright regards Professor Dick's College. But as this state of extreme mental dejection into which Mr. Cartwright has been cast seems scarcely warranted by circumstances, it becomes a duty to offer him such explanations as may afford him some relief. I have much pleasure, therefore, in informing Mr. Cartwright that the "dwindling away" to which he referred was not connected with the internal working of the Dick College, and that it was necessitated by circumstances which, he will be pleased to learn, are not likely to recur.

Mr. Cartwright concluded his address with an advice, couched in somewhat ambiguous language, to "his friends in the North." As those connected with Professor Dick's College do not include themselves in the class to which the advice is tendered, its interpretation becomes to them of little consequence. It seems, however, to have reference to the prospective closure of one of the veterinary schools "in the North," and as Mr. Cartwright is presumably better acquainted with the affairs of his "friends" than with those of the Dick College, I am not disposed to deny that he may have good grounds for his apprehension.

But, in conclusion, permit me to state for the satisfaction of Mr. Cartwright and all who, *like him*, take a deep interest in the welfare of the Dick College, that its condition at present is one of vigorous and increasing prosperity.—

Your obedient servant, JOHN MCFADYEAN.

To the Editors of the 'Veterinarian.'

Pathological Contributions.

CATTLE PLAGUE.

The latest report from St. Petersburg announces that cattle plague exists in the following governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, Bessarabia, Podolia, and Kherson.

A report from Vienna states that cattle plague continues to exist in Borszozow and Kalonica, in Galicia; in Czernowitz, Wisnitz, Storozynetz, Waszkontz, and Kotzmann, in Bukowina; and in Randnitz in Bohemia. The disease has also broken out at Rohozna, in district of Czernowitz, in Bukowina, and in Old Servia, in the districts of Kurchumlia and Prokuplia, and is spreading still further.

A later account states that cattle plague has disappeared from some villages, but still exists in seven. Among a total of 15,800 cattle, 431 animals were attacked, out of which 2 recovered, 75 died; 350 diseased and 900 suspected animals were killed.

A communication from Salonica reports the existence of cattle plague in the city of Salonica and in the district of Aorat-Hissar, in the vilayet of Salonica.

A report from Jassy states that cattle plague prevails in the district of Jassy.

FOOT-AND-MOUTH DISEASE.

Foot-and-Mouth disease was reported to exist during the month of February in the following counties:

Berks, Cambridge, Chester, Essex, Hants, Herts, Lancashire, Norfolk, Northampton, Northumberland, Salop, Stafford (*Wolverhampton*), Suffolk, Warwick, and York, West Riding.

PLEURO-PNEUMONIA.

Pleuro-pneumonia existed during the month of February in the following counties:

Bedford, Bucks, Cambridge, Chester, Derby, Durham, Essex, Herts, Huntingdon, Kent, Lancaster, Lincoln (*Holland* and *Lindsey*), Middlesex, Norfolk, Northampton,

Northumberland, Notts, Stafford, Suffolk, Surrey, Sussex, Worcester, York (East Riding, North Riding, and West Riding), the Metropolis, Glamorgan, Aberdeen, Berwick, Edinburgh, Fife, Forfar, Kincardine, Lanark, Linlithgow, Perth, Renfrew, Roxburgh, Stirling. Pleuro-pneumonia, which has been prevalent in the town of Perth for several months, is reported to have been completely stamped out.

ALLEGED OUTBREAK OF RABIES AMONG THE THANET HARRIERS.

A CORRESPONDENT of the *Kentish Observer* of March 14th says, that in consequence of alarming reports of rabies having shown itself among the Thanet harriers, "we have been at considerable pains to ascertain the facts, and the following narrative may be relied on:

"On Saturday morning, February 23rd, the whip, Bushell, noticed that one of the bitch hounds was fighting with several others in the pack, and on Sunday he reported the matter to the huntsman, who watched her for some time, and ordered her to be tied up apart from the rest. Bushell did so, but neither of them appear to have suspected rabies, for on Tuesday (26th) the whip imprudently took her with the pack to the meet as usual. He noticed that she trembled a good deal, and seemed excited, and was quarrelsome, fighting with and biting several of her comrades; and on Captain Johnston's arrival he pointed her out to the master, adding a suggestion that 'Maybe she's gone mad,' an idea which seemed to be thus for the first time started.

"One of the grooms was then ordered to tie her to his whip-thong and take her home, and this appears to have been done, but on the way she turned restive, and after biting the horse about the legs, she jumped almost on his back several times, apparently with the intention of biting the groom, who became alarmed, and tried to fence her off, but as she eventually managed to draw blood from his second finger, he dropped the whip by which he was leading her, and the hound made off towards the village of Monkton, which she entered, dragging the hunting-whip behind her. Here she soon attracted attention, and was secured and housed in a stye on the farm premises of Mr. Collard, from whence she was subsequently fetched back to the kennels and secured.

"The bitch has since died in a state of furious rabies;

great restlessness, and snapping at imaginary enemies continued to the last; but up to the time of writing this article none of the bitten hounds have shown any symptom of the disease, save one young bitch, which, after being dull and heavy-eyed for a couple of days, has quite recovered.

"The horse has, we believe, been freely blistered on all parts bitten, and the groom's hand has been freely cauterized, and up to the present time, although the hounds have been carefully sequestrated and watched, no symptom of the approach of rabies has been noticed among them. That the deceased hound died of it there appears to be no doubt, and this opinion is understood to be confirmed by Mr. Bentley, M.R.C.V.S., who was early called in to advise on the case.

"It is to be regretted that the bitten groom allowed several hours to elapse before he had the wound cauterised. A bit of whipcord tied tightly and promptly about the root of the wounded finger and the wound well sucked (an operation of no danger whatever to any one whose mouth is sound, though fraught with immense risk to any one having a sore tongue, cracked lips, or any abrasion of the mucous membrane of the cheeks or lips), and then the free application of caustic, would have eliminated ninety-nine hundredths of the risk, and as much of the inevitable anxiety.

"The size of the pack is, we believe, about fifteen couples, including puppies, some three or four of which are located at Margate, a distance of four miles from the kennels, which are at Brooksend, near Birchington."

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of February, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Antwerp . .	London . . .	Sheep-scab . .	...	316	...	...	316	Slaughtered under the instructions of the Privy Council.	...	7018	...	...	7018	Slaughtered under the instructions of the Privy Council.
Bremen . . .	„ . . .	„	...	3	...	...	3	Ditto	...	2310	...	...	2310	Ditto
Hamburg . .	Grimsby . . .	Foot-and-Mouth	...	3	...	...	3	Ditto	...	216	...	...	216	Ditto
„ . .	Hartlepool . .	„	...	5	...	...	5	Ditto	...	1583	...	...	1583	Ditto
„ . .	London . . .	Sheep-scab . .	...	5	...	...	5	Ditto	...	540	...	...	540	Ditto
Total Diseased Animals .		Foot-and-mouth	...	8	...	...	8	Total Healthy Animals .	...	11667	...	...	11667	
		Sheep-scab . .	...	324	...	...	324							
		Total . .	...	332	...	...	332							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of February, 1878.

Veterinary Department, Privy Council Office,
March 11th, 1878.

Facts and Observations.

Cysticercus cellulosæ.—On the 18th of March Mr. Avis brought to Dr. Cobbold a small bladder-worm, three-quarters of an inch in length, which on microscopic evidence turned out to be an unusually fine example of this parasite. The interesting point, however, was that the worm had recently been removed from the testis of a young hog which had been "cut" by Mr. R. H. Ringer, M.R.C.V.S., of Borstal, near Rochester.

Chorioptes spathiferus.—A foreign-bred mare, lately received into the Infirmary, has her hind quarters largely infested by the equine variety of this parasite. According to Mégnin this entozoon is identical with the *Symbiotes bovis* of Gerlach. A similar, if not the same, parasite infests the cow in countless numbers; but Mégnin is not prepared to say that Hering's *Sarcoptes bovis* is the same species. They are probably varieties only. Messrs. South & Day have contributed specimens.

Yew Poisoning.—A fine herd of Highland cattle belonging to the Earl of Lovelace has been entirely destroyed in his park at East Horseley, Towers, Surrey, in consequence of their having eaten the cuttings of a large number of yew trees which abound in the park.

Death of the Cattle King.—The death is reported of Mr. John W. Iliff, of Colorado, known as the Cattle King. He owned from 40,000 to 50,000 head of cattle, and on one occasion cleared £20,000 by a single transaction in beef. There are ten stockmen in Texas who own together 1,230,000 head of cattle.

Improvement in Breed of Horses.—With a view to improve the breed of horses suitable to the county of Cornwall, an American trotting stallion of great strength, beauty, and fine action, has been introduced into that district by Mr. Brydges Williams, of Carnanton.

The Food Supply.—Five steamers reached the Mersey last week bringing, collectively, 5712 quarters of beef, 1628 carcases of mutton, and 283 carcases of pigs, whilst another steamer from Canada landed on Friday 150 head of cattle and 423 live sheep.

THE VETERINARIAN, APRIL 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

SPLENIC FEVER.

EVERY member of the veterinary profession who practises in the country is more or less familiar with outbreaks of virulent forms of disease among animals, the characteristics of which are suddenness of attack, fatality, and mysterious origin.

In popular language the terms "blood disease" or "blood poisoning" have been applied to these affections, and it has long been known that in some forms at least of the diseases the blood is always found to be charged with peculiar rod-like bodies, or bacteria (*Bacillus anthracis*).

Investigations which have been conducted on the Continent have resulted in the conclusion that rod-like bodies are invariably present in the blood of animals which suffer from splenic fever, or, as we more often call it, splenic apoplexy, and we have in numerous instances used minute portions of diseased blood to inoculate small animals always with fatal effect; and in every case the blood of the inoculated animals has been found to be charged with the characteristic rods which are apparently capable of almost unlimited multiplication in a few hours.

One remarkable circumstance attending the experiments referred to is that no trace of rods is usually detected in the blood of an inoculated animal until death has taken place. The blood of the guinea pig appears to supply a favorable nidus for these organisms, and we have observed that the animals often die from twenty to thirty hours after inoculation. In several instances we have examined the blood at short intervals from the period of inoculation to the time of death, and have failed to detect any rods; but immediately after death the blood has presented them in countless numbers in the field of the microscope.

In reference to the changes which the bacteria pass

through, and their influence on the animal organism, Dr. Sanderson has recently given us a series of lectures at the London University, but to these points we do not purpose to allude further; our present object is to call the attention of the profession to the importance of a critical investigation being made in all cases of "blood diseases" which may come under their notice.

Special notice should be taken of the forms which blood diseases assume. Rod-like bodies are found in splenic fever; but are all the cases which are reported as splenic apoplexy instances of this disease? The proof is easy, and by the aid of the microscope it may at once be ascertained whether a specific disease exists or some other form of disorder in which mere engorgement of the spleen happens to be a feature.

"Black quarter," as it is usually called, is a form of blood disease which demands careful investigation, and there are modifications of disease which come under the general terms hæmatosepsis and hematostasis, in which it is very necessary to determine whether or not the distinctive rods occur.

Continental veterinarians are far in advance of us on the subject of anthracoid disease; and while taking advantage of their investigations, we have every reason to continue the inquiry.

Extracts from British and Foreign Journals

EXPERIMENTAL AND ANATOMICAL INQUIRY INTO THE SO-CALLED PIG-TYPHOID.

By E. Klein, M.D.

In an elaborate and important paper in the *Veterinarian*, June—November, 1875, Professor Axe, of the Royal Veterinary College, London, endeavoured to prove that human typhoid in its clinical history, etiology, and morbid anatomy, has its complete analogy in a disease in the pig, the so-called pig-typhoid. This theory, as is well known, has been first advanced by Dr. Budd; and as is likewise well known Dr.

Murchison, in his book on 'Continued Fevers,' has expressed grave doubts as to the admissibility of such a comparison; not, I believe, so much on account of the non-communicability of the human typhoid to the pig, but on account of the anatomical dissimilarities between the two diseases.

The so-called pig-typhoid is, at any rate, an interesting disease, and being a good example of an infective fever in animals, I thought it might be of interest to the members of this Society to receive a short communication of the results of an inquiry into the etiology and morbid anatomy of that disease.

It will facilitate the understanding of those results if I may be permitted to give first a brief summary of what is known of the clinical history of this disease.

A. It is well ascertained that the disease is a specific infectious fever, having an incubative period of from three to fourteen days, followed by systemic disturbance manifesting itself in fever and concomitant symptoms, viz. high temperature, dulness, congestion of eyes, &c. A few days after the first signs of the disturbance there appears a patchy redness on the skin of the abdomen, axilla, the inguinal region, inside of thighs, the perineum, neck, and ear-lobes, the skin being at the same time swollen at those places. A few days later there appears, according to Professor Axe, an eruption which he regards as the typhoid eruption, and which he describes in the following manner:

"Preceded by a considerable rise of internal temperature, the eruption is developed on the fifth day in the form of small, round, raised spots of a faintly red colour. The under surface of the belly and breast, the haunch, the inside of the arms and thighs, and behind the ears, are the parts on which it is most commonly observed. These spots vary in size from one to three lines; some are acuminated, others, and by far the majority, present a more or less rounded free surface. They are circular in outline, and rise from a diffused or circumcribed base. Some are but slightly raised above the general surface of the integument . . . . They are somewhat firm in consistence, and the redness quickly disperses on the application of pressure. . . . .

"After the lapse of two or three days the raised spots subside, and are followed by a second, a third, or even a fourth crop. They remain from one to three days and then disperse, leaving the epidermis in a ragged desquamating condition, and the seat of the eruption of a brownish-yellow colour. . . . .

"Should the fever be intense and the cutaneous inflammation run high, vesicles of various sizes appear on the summit of the pimples. These are charged with a thin, transparent, clear fluid. When the eruption is confluent and the vesicles coalesce the cuticle may sometimes be removed in large layers several inches square."

Early in the course of the disease general prostration ensues. The bowels are in some cases constipated; in other cases there is diarrhœa, and the stools are then thin and watery, and of a brownish-yellow colour. In severe cases there is blood mixed with the discharges. The belly is always tender to the touch. Besides this, the animals show great stupidity, giddiness, and even delirium. The animals generally die after a longer or shorter period (it varies between several days and several weeks), under signs of prostration and emaciation; about 85 or 90 per cent. is the death-rate.

B. The post-mortem examination of those animals which I had the opportunity to examine—twelve in number—showed as the most prominent lesions those referring to the skin, intestine, lymphatic glands, liver, and lungs.

(*a*) *Skin.*—In most of the twelve animals that were examined the skin was affected. It is swollen and of diffuse red colour about the perineum, symphysis, and groins, so is also the skin of the neck. The ear-lobes much swollen, especially near the tips, and red. The same is the case with the skin of the nose. In two cases there was no distinct rash, and in one case there were (a few in former, numerous in latter place) smaller or larger necrotic patches of the superficial part of the skin of groins, and especially in both ear-lobes.

(*b*) *Intestines.*—Small intestine shows, as a rule, hyperæmia, and in some cases ecchymosis in the mucous and submucous tissue, and the serous covering. In some rare cases the same is seen also in the stomach. Large intestine shows always the most characteristic appearances. In some cases there are smaller or larger, isolated or confluent, ulcerations at and around ileo-cæcal valve, the rest of the mucous membrane being hyperæmic. In the highest degree the whole large intestine down to the rectum contains ulcers; in the cæcum they are confluent, and measure several inches, extending transversely as well as longitudinally; while the whole remaining mucous membrane of the large intestine is much thickened, and in some parts the submucous tissue contains large accumulations of blood. The ulcers are of various aspects. The following forms may be seen: very minute, well-defined, prominent, yellowish-whitish

specks, of the size of a millet or hempseed; then somewhat larger, more flattened, prominent, circular or oval, yellowish patches (with which in one case the whole mucous membrane of the cæcum seemed quite covered) up to about $\frac{1}{8}$ of an inch in diameter, next, flat, circular, or slightly oblong patches, situated on a crest of a fold of the mucous membrane, in size from $\frac{1}{8}$ to 1 inch in diameter, generally black or grey in colour, except a very conspicuous and, I may almost say, characteristic prominent rim, which is yellow. The ulcer generally presents a pale, central, or eccentric disc, around which are arranged concentric rings. Between these flat ulcers with concentric layers and those uniform, yellowish-white, prominent patches and nodules there are all intermediary forms.

The above-described ulceration of the large intestine of the pig cannot in any way be confounded with the characteristic ulcers of human typhoid; the differences are really striking on the most superficial inspection; and it is to me unintelligible how so eminent an observer as Dr. Budd could have drawn any comparison between the two diseases. The microscope reveals a marvellous difference in the two diseases, for in the pig-typhoid these patches, whether nodules or ulcers, *have absolutely nothing whatever to do with lymphatic follicles,* whereas in human typhoid it is just these structures which by their changes lead to the characteristic ulceration.

In a few cases I observed ulceration also of the organs of the throat. In one case these were symmetrical ulcerations of the mucous membrane of the gums and cheeks, of the front part of the tongue, of the hard and soft palate, and of the epiglottis. The ulcers were of a dark grey colour; and what was most conspicuous about them was their symmetrical distribution on the two sides of the above organs.

Besides the intestine, the following lymphatic glands present very characteristic appearances: the mesenteric glands, especially those of the large intestine; the bronchial glands; the chain of glands along the thoracic (descending) aorta; the sternal glands; and the submaxillary lymphatic glands. The glands are much swollen, slightly firmer than normal, more or less red, in severe cases dark purple or even black, and when cut into letting a considerable amount of red fluid ooze out. At the same time it may be seen that the chief seat of red colouration is the cortical part of the gland, from which it extends for a greater or smaller distance into the medulla, according to the greater or lesser severity of the disease.

The microscope reveals in all cases the very characteristic

state, namely, a bursting of blood-vessels in the cortical tissue, and hæmorrhage into the lymphatic follicles and sinuses of that part, amounting in severe cases to total destruction of the adenoid tissue by blood. In all severe cases the medullary sinuses, and partly also the medullary lymphatic cylinders, become filled with extravasated blood. In so far this condition is similar to what is found in anthrax. Now, this state of the lymphatic glands is, as I said, very characteristic, and, combined with the disease of the intestine, is of paramount importance for the diagnosis.

Further important symptoms, and which have not hitherto received due attention, are the affections of the lung and serous membranes. Especially the lung affection has shown itself to be as constant as any of the preceding, even more constant than that of the skin. The state of the lung is this: the slightest degree consists in a distinct mapping out of the lobes and lobules by œdema of interlobular tissue, the lung-tissue of the corresponding parts being at the same time hyperæmic. Then these parts become hepatised and transformed into a heavy, airless, red, transparent tissue; and subsequently smaller or larger opaque or white specks and patches appear in the red substance, and, as they increase in size, become gradually confluent. On a section it may be seen that this is due to the fact that the bronchial tubes become gradually filled with a white, brittle, cheesy mass, progressing gradually from the finest ramifications on to the larger branches of the affected lobules and lobes. Finally the whole lobule is transformed into a discoloured, dry, hard, friable mass. The pleura of the corresponding parts is, of course, inflamed, being in some cases exceedingly thick, and covered with false membranes. In severer cases the greater part of one lung and portions of the other may be thus changed, and on the external surface there may exist smaller or greater ulcerations. Except in very slight cases there is generally a certain amount of pleural exudation; and in severer cases the pleura contains a considerable quantity of a thick, offensive, yellowish, or discoloured exudation. In some severer cases the pericardium is also inflamed, containing a large quantity of exudation, and its walls being much thickened by false membranes. The same is also the case with the peritoneum, this being in some cases hyperæmic in parts, or even covered with solid lymph and pus. We have had cases where there was no skin eruption, slight intestinal change, and extensive pleuro-pneumonia, pericarditis, and pleuritis.

The next organ of importance is the spleen. The sp

is of dark colour and sometimes enlarged; in some cases it appears not altered in size. In one case it was remarkably enlarged, having throughout it irregular nodular structures, from the size of a pin's head to that of a pea or even larger, whitish in appearance, and of firm consistency.

The liver is in severe cases enlarged and very full of blood. The kidney is sometimes also changed: there is hyperæmia of the pyramidal parts, and underneath the capsule, which may be easily stripped off, there are visible on the surface of cortex hæmorrhagic round spots, of the size of a pin's head, while similar spots, but scarcer, are met with in the cortex and pyramids. The severer the case the more numerous the hæmorrhagic spots.

Thus we may say that the skin, large intestine, lymphatic glands, and lungs, are the organs most commonly affected, and that changes of the serous membranes, the spleen, liver, and kidney, and likewise of the organs of the throat, are of less constant occurrence.

c. I now pass to the microscopic examination of the intestine.

(1) *Intestine.*—The mucous membrane of the large intestine shows the following changes:—The capillary vessels next the surface very much distended and filled with blood, occasionally ruptured, so that blood is extravasated in the mucosa underneath the epithelium. Generally the epithelium at the mouth of Lieberkühn's crypts detached and in the act of breaking down. The same is the case with the epithelium covering the mucosa around the mouth of the crypts; at these places the epithelium is raised from the mucosa by the presence of cavities filled with fluid, in which are suspended cells, granular matter, and blood. In some cases there is copious hæmorrhage in the submucosa; the lymphatic vessels of the submucosa are very much distended and filled with blood, derived, no doubt, from broken vessels.

From the above condition of distension of blood-vessels, loosening and partial or total removal of epithelium, we have all intermediary forms leading up to the necrosis and disintegration of the superficial portions of the mucosa, commencing as very small circumscribed opaque spots in which the tissue is disintegrating, and rapidly increasing in breadth and depth. There is no doubt whatever that the "ulcerations" of the large intestine are merely due to a necrosis of the most superficial part of the mucosa.

The submucosa shows at the same time, next the muscularis mucosæ, a reactive inflammation, being full of pus-corpuscles. As the necrosis spreads, the infiltration of the deeper

parts with pus-cells increases. Generally the muscularis mucosæ seems to be the boundary up to which the necrosis proceeds.

What we have said hitherto is, I think, quite sufficient to convince any one that the "ulceration" of the mucosa of large intestine in the pig has absolutely nothing in common with the ulceration of the intestine in typhoid fever of man; the latter being a process entirely limited to the lymphatic follicles of the intestine.

Note.—I will mention here the presence of giant cells in the mucosa in lymph spaces around the crypts of Lieberkühn.

With regard to the ulcerations of the mucous membrane of the mouth, gum, hard palate, and tongue, I have to state that here, also, the ulceration consists in a necrosis of inflamed mucous membrane.

(2.) *Lymphatic glands.*—Corresponding to greater or lesser redness of the lymphatic glands, we find the cortical parts occupied by greater or smaller masses of blood, the adenoid tissue becoming, at the same time destroyed. In the most acute cases we find great portions of the cortical follicles transformed into an uniform red mass. All the lymph-sinuses are in this case also filled with blood, and hence a very striking appearance is produced in some parts: the medullary cylinders being still intact, while the lymph-sinuses between them and the connective-tissue trabeculæ are much distended and filled with blood.

In the mesenteric glands of some cases I have found great numbers of giant cells filling up the lymph-sinuses of the medulla. These "giant cells" I can trace down to small granular cells, looking very much like epithelial cells. Some of the larger ones contain twenty, thirty, and more nuclei.

(3.) In addition to what I have said of the changes presented by the lungs I have to mention that in some places the lung is the seat of lobular pneumonia. The walls of the air-cells are thickened by round cells, and the cavities of the former filled with fibrin, lymph-cells, changed epithelial cells, and in some instances also smaller or larger "giant cells." In other places the bronchi are thickened and surrounded by huge masses of round cells. In the last stages or higher degrees the inflamed tissue becomes transformed into a necrotic disintegrating mass.

(4.) *The liver.*—Its interlobular connective tissue is greatly altered by infiltration with lymph-corpuscles, which at some parts form considerable accumulations, amounting almost to nodular new growths. Similar accumulations of lymph-cells

may be observed within the acini of the liver of more advanced cases.

As regards the etiology of the disease, it is known and experimentally proved by Profesor Axe (*a*) that the infection is carried out through the air, and (*b*) that the skin contains the contagion, for, withdrawing fluid from the affected skin and injecting it into the skin of a healthy animal Professor Axe succeeded in producing the disease. That the contagion is also contained in the ulcerations of the bowels, and therefore in the intestinal discharges, has been tacitly assumed. I have, however, succeeded in proving, by direct experiment, that this is really the case, for injecting into the skin of a healthy animal minimal quantities of matter obtained by scraping the ulcerated intestine of a diseased animal produced invariably the disease. It is, however, doubtful whether simple feeding with the ulcer material has any effect, for in two cases simple feeding failed to produce the disease, and in one case, where feeding was followed by the characteristic symptoms of typhoid, a previous lesion of the mucous membrane of the mouth may have been, and very likely was, the means of inoculating the animal, the infecting food having had to be introduced by force.

By another experiment I proved that also the diseased spleen contains the virus, for when parts of this organ be introduced into a healthy animal, either mixed with the food or by direct inoculation into the skin, the animal becomes smitten with the disease,

As a last, but not least, interesting experiment, may be mentioned this:—Juice and blood obtained from the swollen lymphatic gland of an animal dying under well-developed symptoms of the typhoid were injected into the skin of a healthy animal. This animal did not show any signs of the disease, but after sufficient time had been allowed to elapse, it was again inoculated with material taken from an intestinal ulcer of a typhoid animal; it then showed distinct signs of the disease, although only of a very mild degree.*

This experiment, no doubt, does away with the idea of many continental veterinary pathologists, who regard this disease as anthrax, well known for the infective properties of the blood at all stages of the disease. I may mention, incidentally, that the well-known *Bacillus anthracis*, so characteristic of blood of anthrax, were absent in the blood of our animals. Whether, however, the blood and lymphatic glands, in early stages of pig typhoid, contain the virus, whether, as

* The experiments were carried out in conjunction with Mr. H. Duguid veterinary surgeon at the Brown Institute.

is very probable, the affected lung harbours the contagion, and if so in what way it is communicable, viz. whether by air or food, or through lesions of the skin or mucous membranes, are questions which we hope to decide by further experiments.—*Pathological Transactions.*

THE AMERICAN CATTLE TRADE.

By Professor H. E. Alvord, of Easthampton, Massachusetts.

I will endeavour to give a careful and candid presentation of the facts in connection with the production of beef in America, and the present condition and future prospect of the trade in dead meat between the United States and Great Britain.

The general statement that the capacity of this country for the production of beef far exceeds all present needs within our borders, and hence that a demand from outside can soon be met by raising more live stock, more corn, and accordingly more beef, admits of no dispute. But the details of this production and the condition of the home markets are called for.

As a proper introduction, let us first consider the elements of the article *beef*, namely, the animals, the pasturage, and the grain used for food.

What are known as the "native" cattle of America, have sprung from the stock of the parent countries which successively contributed to the colonisation of the New World, and the types of the original varieties can still be distinguished in some parts of our land. In the older States of the Union, the common stock is a mixture descended from the different kinds of English, Dutch, Swedish, and Danish cattle, brought to the Atlantic shore in the seventeenth century, the English predominating. They have been largely modified by the changes in the climate in which they lived and bred, while the colonists, occupied by their own protection and sustenance, were obliged to let their little herds shift for themselves. The "natives" cannot, therefore, be properly compared with any old or distinct breed, but they are an excellent basis of hardy stock on which to build, and they comprise, with the fast multiplying "grades," the great bulk of the beef and dairy-cattle of thickly peopled States. More than eighty years ago the process of improvement began, by the use of imported Shorthorns, and this has continued notably in Virginia, Kentucky, New York, Pennsylvania, and Ohio, until the home production of thoroughbred animals is sufficient to furnish the means for the rapid improvement of the whole native stock of the country. There has latterly been a very brisk demand for

young bulls, pure bred and high grades, for service in the herds on the Plains. In the South-West, the Rocky Mountain region, and on the Pacific slope, are found the descendants of the Spanish cattle, introduced into Mexico three hundred and fifty years ago; and these, compensated by a genial climate and luxuriant herbage for want of care, preserve many of their original characteristics. They are tall, lean, lank, and bony, flat sided, high in the flank, and often swayed in the back; heads coarse, with long and wide-spread horns, with a half or full twist to them, and set rather back, with points outward. The colours are black, dark brown, "brindle," reddish-brown, light yellowish-red, and occasionally a grey, nearly all with more or less white upon them. The cows are almost as large as the oxen, and of similar appearance; they furnish the calf with but a scanty supply of milk, and that for only twelve or fifteen weeks from birth. They have half-wild natures, impatient under restraint. But this description applies rather to the past than to the future. The "Texans," as they are called, form nearly, if not quite, one fifth of the whole number of cattle in the country.

So also, in Canada, the rugged little Brittanies of the early French settlers maintain themselves as a distinct race, and serve a most useful purpose within certain limits, but are seldom seen beyond them.

Authorities differ as to the number of neat cattle now in the United States, but a medium estimate for the present year is 29,000,000. This is probably low, as it allows an annual net increase of but one per cent. since 1870, being the rate per annum for the decade then ended, which included the war period: while for the ten years from 1850 to 1860, the increase was from 10 to 25 millions, or almost 40 per cent. These cattle represent a value placed by some at 180 millions sterling*; this being based upon their worth for ordinary purposes of the dairy and shambles, with no allowance for the fancy prices at which imported and pure bred animals are held, and which are paid for them, as in the famous case of the £8000 cow.

Add the fact that in the United States there are for every 100 persons but 75 cattle, and that these have 5000 acres of land, and some idea may be formed of the *capacity* of this country for the production of animal food.

There are few parts of this country not favorable to cattle

* The prices and values stated in this article have been calculated from those originally given in United States currency by Professor Alvord, at the rate of 4*s.* per dollar; and small amounts have been reduced by taking the cent as equal to a halfpenny.—[Ed. *of Journ. Royal Agricultural Society of England.*]

raising, although the sections differ, of course, in natural advantages of pasturage, &c. In New England, the Middle States and the northern tier of the Western States, and throughout the North-West, good pasturage abounds in its season, but is available during less than half the year, protection and forage being necessary for six or seven months. In the great central section, especially in the famous blue-grass region of Virginia, Kentucky, Tennessee, parts of the Carolinas, and of the Gulf States, the pasturage is particularly fine, and the season is longer by two or three months. Then in the South-West, and on most of the Pacific coast, nature provides luxuriant herbage the greater part of the year, which is self-cured for the remainder, so that the large herds pass the winter without shelter or feeding, and come out in the spring in very fair condition, as a general rule.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD MARCH 8TH, 1877.

Present—The President in the chair; Professor Brown; Messrs. Batt, Cox, Cuthbert, Cartwright, Dray, Fleming, Gowing, Greaves, Moon, Reynolds, Smith, Williams, Woodger, Taylor, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

The Secretary intimated that a letter had been received from Mr. George Williams, acknowledging the honour of his election as a member of Council.

Examinations.

At the meetings of the Court of Examiners for the Pass Examination, held in London on January 8th, 11 students passed and 6 were rejected.

At the meetings of the Court of Examiners, held on January 9th, for the "first Examination" under the two years' system, 2 passed and 7 were rejected; and on January 10th 2 passed and 1 was rejected; for the three years' system 5 passed and 3 were rejected. On January 11th, for the first examination, 10 passed and 1 was rejected: making a total of 19 passed and 12 rejected.

Scotch Examinations.

At a meeting of the Court of Examiners in Scotland, held on January 21st, 1878, from the Edinburgh Veterinary College 2 passed and 1 was rejected, and from the New Veterinary College 2 passed and 3 were rejected.

A letter had been received from Dr. Dunsmure stating that there were only nine candidates for the minor examination under the old rules. He also enclosed the report of the examinations held in Edinburgh on January 21st, and enclosed a cheque for £19 3s. 6d., balance of fees and receipts for expenditure.

A letter had also been received from a rejected student asking whether he could have another examination.

He was furnished with an extract from Bye-law 34, and informed that students were not allowed to present themselves more than three times for examination, and that the next examination would be fixed by the Council in April. He then wrote to ask whether rejected students would have to pay three guineas for examination; but he was referred for further information to Dr. Dunsmure.

Another letter was written by Dr. Dunsmure, in which he stated that he had letters from three rejected students from the New Veterinary College, and asked to be informed whether they could come up for examination in April next.

The Secretary stated that, as they had only been rejected once, they were entitled to come up again for re-examination.

A letter had also been received from Mr. Murray, holding the Highland and Agricultural Society's certificate, and who was a candidate for the diploma of the Royal College of Veterinary Surgeons, wishing to be examined in Edinburgh at Christmas.

He was informed that there would be no examination for the diploma until April next.

A letter was received from Professor Simonds, stating that he would not be able to attend the Council meeting, and asking that the Council would sanction April 1st as the commencement of the forthcoming examinations, and that five nights would be required for the same.

The proposal was agreed to.

Professor Brown, who was obliged to leave the meeting, took leave to make a few observations with regard to the "Contagious Diseases (Animals) Bill." Considering the position he occupied with regard to the Bill, it would be quite impossible for him to say anything with reference to its objects or as to the course of any legislation which might be taken in regard to it. He wished particularly to announce to the Council that on several occasions —certainly on three—Professor Simonds and himself endeavoured to introduce into the Bill a clause that would lead to veterinary inspectors being members of the Royal College of Veterinary Surgeons, but on every occasion the amendments in Committee practically negatived their endeavours. The Bill that was now before the House provided that the local authorities should be bound to appoint a veterinary inspector in each district. They were not prohibited from appointing any other officers they chose; but they were bound to keep one veterinary inspector; and it would be found that the definition of the word "veterinary" meant, in connection with inspector, a member of the Royal College of Veterinary Surgeons. That was so far satisfactory; but he also wished to state that there had always been a determined effort to introduce the holders of the Highland and Agricultural Society's certificate on a par with the members of the Royal College of Veterinary Surgeons. The general

statement that there were men holding that certificate who were as fit to be inspectors as the members of the Royal College, was no doubt quite true. There were men even without certificates who were capable of being inspectors; but it was not a question of capability—it was a question whether a man should be termed Veterinary Surgeon without holding the diploma of the Royal College of Veterinary Surgeons; and he apprehended that the feeling of the Council was that such permission should not be given if it could possibly be withheld. He did not know what course the Council proposed to take, but he would suggest that the Bill should be watched and that effort should be made to ensure that the members of the College should be recognised, and that whatever other persons might be employed by the local authorities as inspectors, they should not be put in the same position as members of the Royal College. As a hint to the Parliamentary Committee, he alluded to the "Cruelty to Animals" Bill, in Clause 5 of which there was a distinct provision, that if any person, after the passing of the Bill, wished to have an infirmary for animals, he should give notice to the local authorities and have his place registered, and that it should be opened at reasonable times to the inspection of inspectors whom the local authority should appoint from officers already under their charge or other persons whom they think fit. If any one wished to have an infirmary, it would not be pleasant to know that it was an open establishment for the visit of the local authority inspector at any time he might think proper to look in without the slightest ground for interference.

The President said there was a question from Edinburgh, by Mr. Williams, in regard to Clause 37 of the Bill, which provided that "every local authority shall from time to time appoint so many inspectors and other officers as they think necessary for the execution and enforcement of this Act, and shall assign those inspectors and officers such duties and salaries or allowances, and may delegate to any of them such authority and discretion, as to the authority seem fit." The question Mr. Williams asked was, whether the inspector, without the sanction of the local authority, could order the slaughter of diseased animals under the present Act.

Professor Brown.—Certainly not: the local authority were bound in the first place to inquire into the correctness of the report. The inspector would have no such authority without the local authority delegated it.

Professor Brown having also answered some other questions relating to the provisions of the Bill, was obliged to leave. The Council then reverted to the agenda.

The Secretary stated that, in answer to a letter from Mr. Cornhill, of Bridgewater, he had replied to the effect that no person is allowed to assume the title of Veterinary Surgeon except after an examination by the Royal College of Veterinary Surgeons.

A letter had been received from Mr. Jenkins, Secretary of the Royal Agricultural Society, asking for the Examiners' Report.

A reply was sent to the effect that, at the request of the President, the report was sent to Mr. Harpley on the 17th inst. The names and addresses of the successful candidates were also enclosed.

The *Secretary* read the following report of the examination of candidates for the Royal Agricultural Society's prizes:

Report.

"The examination of candidates for the Royal Agricultural Society's prizes took place on January 9th and 10th.

"Twelve candidates were eligible to compete for the above prizes; seven having entered their names, only four presented themselves on the day of examination. The practical part was conducted at the Lairs of the Cattle Market, Islington, and the written and *vivâ-voce* Examination was held at the Royal College of Veterinary Surgeons.

"The following is the Report received from the Examiners appointed by the Council:

"To the President and Council of the Royal College of Veterinary Surgeons:

"Gentlemen,—We, the Examiners selected by you to test the qualifications of the candidates for the prizes for Cattle Pathology so liberally offered by the Royal Agricultural Society, beg to hand you our report.

"We feel some regret in not being able to compliment the gentlemen on their proficiency so highly as last year, but we are happy to add that the practical portion of the examination was the most satisfactory.

"Having fixed the standard of excellency at 900, the numbers attached to each name will indicate the position the several gentlemen have attained.

"First Prize . . .	Matthew Hedley, 640.
"Second Prize . . .	Thomas Chambers, 545.
"Third Prize . . .	Robert Ernest Hoile, 533.
	Lawrence C. Tipper, 302.

"(Signed) "Robert L. Hunt,
"T. Walton Mayer,
"D. Greswell, } *Examiners.*"

The following is a copy of the letter which accompanied it:—

"January 10th, 1878."

"10, Red Lion Square, London, W.C.,
"Jan. 17th, 1878.

"Sir,—I have the honour to forward the Report of the Examiners appointed by the R.C.V.S. for the prizes so generously offered by the R. A. Society to the students of the Royal Veterinary College.

"I am glad that the Examiners have not hesitated to bring to

notice the deficiency in the knowledge of cattle practice shown by the competitors.

"When a fault is thus prominently brought to notice, there is always reason to hope that it will be corrected.

"The prizes now given, and I hope to be continued annually, will no doubt cause more attention to be given to the important subject of cattle practice.

"I may add, however, in extenuation of a failing in proficiency in this branch of veterinary science—which I very much regret—that the period of study hitherto required (viz. *two* years) has been too short.

"This evil is now corrected, and under the new course of *three* years I hope and think that it will be possible for the schools to turn out students thoroughly fitted at *once* to go into practice.

"I have the honour to be, sir,
"Your obedient humble servant,
"F. W. FITZWYGRAM, President R.C.V.S.
"The Secretary, Royal Agricultural Society."

The following Report of the Examiners for the Fellowship Degree was read:—

"ROYAL COLLEGE OF VETERINARY SURGEONS.

"A special meeting of the Court of Examiners appointed by the Council for the examination of candidates for the degree of Fellow, was held, in accordance with the Supplemental Charter, on Jan. 12th, 1878.

"The following candidates, having produced their certificates, underwent the necessary written and oral examinations, and obtained their diplomas and were admitted Fellows of the R.C.V.S.:—

"Mr. Arthur Henry Santy, Norwich.
„ William Duguid, 'Brown Institution,' London.
„ Robert Ward, Woking, Surrey.
„ John Woodroffe Hill, Wolverhampton.
„ Harry Olver, Tamworth.
„ Joseph Mackinder, Peterborough.
„ Charles Edward Challinor, Pendlebury, Manchester."

A letter had also been received from Captain Russell, in continuation of his letter of May last, asking for a definite reply as to whether he should be required to pass an examination before the College of Preceptors before he presented himself for a Fellowship.

He was informed that the period, according to the Bye-law, had not yet expired. Capt. Russell, the Secretary stated, had since filled up the certificate and returned it for the examination.

The *President* held that the case had not come within the rules of the Royal College of Veterinary Surgeons.

The *Secretary* stated that a letter had been received from the Lord President of the Council, dated 26th February, 1878, enclosing a copy of the "Contagious Diseases (Animals) Bill,"

and stating that the Privy Council would be glad to receive the opinions of the Council thereon.

The *President* thought that a general discussion on the merits of the Bill should take place, and that afterwards a small Committee should be appointed to draw up a report.

Mr. Smith then resumed the discussion on the Bill. He said he had been appointed inspector for the county of Norfolk, and gave several valuable facts which had occurred in his experience, for the guidance of the Committee. He thought that if none but members of the Royal College of Veterinary Surgeons were appointed inspectors it would tend to raise the status of the profession, and give satisfaction to the public generally.

Mr. Fleming thought that on the whole the Bill was a very good one, and was calculated to confer a large amount of benefit on the country. He was sure that the profession would be grateful to the Lord President of the Council for having included in the Bill members of the Royal College of Veterinary Surgeons. This, however, only applied to England, Scotland and Ireland being omitted. However, the concession in regard to England was a step in advance; and perhaps His Grace was led to exempt Scotland and Ireland from the fact that a great number of those who practised held the certificate of the Highland and Agricultural Society. If the attention of the Lord President were called to the omission, no doubt it would be remedied. The word "animal" might also be more strictly defined; and he thought the words "horse" and "mule" ought to be inserted, otherwise the Bill would be found to work badly. On the other hand, the profession ought to feel that the various diseases would be properly dealt with. In his opinion it was the best Bill that had ever been introduced, and would go far to reduce the injuries done by the several maladies.

Mr. Peter Taylor wished that the Bill had been more comprehensive. There was no guidance as to Glanders and Farcy, and he thought that the slaughter of cattle at the port of debarkation was undesirable.

Mr. Reynolds thought the Bill admirable as far as it went, but thought it did not go quite far enough. It would be found in practice that the dead meat market for the supply of inland towns would work far better than the import of cattle. He thought it of great importance that the clause which provided for the recognition of veterinary surgeons as inspectors ought to be included in the Bill, and that strenuous efforts ought to be made to retain it.

The President said it occurred to him that there was a practical difficulty in including horses in the Bill. If a horse were slaughtered, the owner would have to be paid compensation to a certain amount; but with regard to cattle, they had a certain value when they were killed; it was therefore to be presumed that a valuable property was being destroyed. If the large class of cab-drivers and costermongers were to be told that they were

to have £5 each for their horses if slaughtered in cases of Glanders, then there would be a danger of their being starved to death; and almost every horse in London belonging to these classes would die of Glanders.

Mr. Fleming thought it would be well to point out the omission to the Privy Council.

Mr. Batt held that there ought to be some official inspection of the places where horses were kept, because the prevalence of Glanders and Farcy was greatly due in London to the unsanitary condition of the stables.

Mr. Fleming considered that there should be a right of entry into stables, similar to that which had been extended to dairies.

The President thought that in London there was power to make such entry.

Mr. Woodger said it only extended to the inspector of nuisances, who could place a policeman at the door where there was suspicion. If the owner desired, the reasoning for entering must be put in writing.

The President remarked that English people had great objection to their premises being invaded.

Mr. Woodger said that he had never met with any opposition in inspecting premises.

The President was of opinion that there should be a general inspection of cowhouses and stables.

In reply to *Mr. Smith*, *Mr. Woodger* stated that the dairies in London were all licensed.

Mr. Smith thought it was desirable that there should be a right of entry into country dairies, and that there should be a small registration fee, say of 2s. 6d. a year, which would give the right of supervision.

Mr. Greaves was of opinion that a small committee, with discretionary powers, should be appointed to consider the matter, and that the Council should use every effort to have the clause providing for veterinary surgeons as inspectors retained in the Bill.

A Committee, composed of the President and Messrs. Fleming, Smith, Woodger, Greaves, and Dray, was then appointed to meet on the following day, to consider and report upon the merits of the Bill.

Suspension of Bye-laws 32 *and* 33.

The following letter was read from Mr. Loch in reference to the suspension of these bye-laws:—

"8, Great George Street, Westminster, S.W.,
"*Jan.* 11*th*, 1878.

"Dear Sir,—I duly received your letter of the 5th inst. I presume it is wished that I should give an opinion upon the terms of the motion with reference to Bye-laws 32 and 33, notice of which has been given by Sir F. Fitzwygram, and of which you have sent me a copy.

"With much deference, therefore, I would suggest that the motion, if adopted in its present shape, might be open to the construction that Bye-laws 32 and 33 were for the next three years wholly suspended in favour of all and sundry—which wide construction would not be limited by the words which follow applicable to gentlemen holding the certificates of the Highland and Agricultural Society. The admission of those gentlemen in a particular manner might be the reason for the suspension; but others beside them would, I apprehend, under the present wording, be entitled to the same privilege.

"I venture to submit the enclosed form for consideration. By it the two bye-laws would not be suspended, but only altered or modified to meet the requirement of the particular case.

"Yours faithfully,

"(signed) W. A. Loch.

"W. H. Coates, Esq., Secretary,

"Royal College of Veterinary Surgeons."

The *President* said that in consequence of Mr. Loch's opinion he withdrew the motion he had brought forward in reference to this matter some ago, and gave notice to suspend the alterations that he had proposed. The notice was as follows:

"I gave notice that I intend at the next quarterly meeting to move that, nothwithstanding Bye-laws 32 and 33, gentlemen who have held the certificate of the Highland and Agricultural Society of Scotland for three years, and who are desirous of obtaining the diploma of the Royal College of Veterinary Surgeons, may at any time within a period of three years from the 8th day of March, 1878, pass the second and third examinations at one and the same time, on payment of the full fees—*i.e.* £10 10s.; and gentlemen who have held the certificate for less than three years prior to 31st December, 1877, and who are desirous of obtaining the diploma of the Royal College of Veterinary Surgeons, may at any time within the said period of three years pass all three examinations at one and the same time, on payment of the full fees.

"F. W. Fitzwygram.

"March 8th, 1878."

The *President* said that there was a notice of motion standing in his name to defer the enforcement of Bye-law No. 35 for a further period—namely, until the list of students who entered the veterinary school prior to the passing of that bye-law was exhausted; or to extend the period under which students might be examined under the old three years' rules from Christmas 1878 to July, 1879. In all legislation they were obliged to have regard to vested interests. When Bye-law 35 was passed, it was agreed that it should not be operative until the list of students who joined prior to the passing of the new Bye-laws was exhausted. It appeared that, although July, 1878, was fixed as the date when the list would probably be exhausted, there would

be a number of students who would be affected by the rule, and to whom an injustice would be done. He therefore proposed—"That the rule shall not be enforced until such time as the list of students who joined prior to the making of that rule are exhausted, or until July, 1879." The Governors of the Veterinary College in London would be satisfied with this course, to which he asked the assent of the Council.

The motion was agreed to.

The *President* gave notice that he intended to move an alteration in Bye-law 50, line 5, to the effect that in lieu of "or a certificate of liberal examination," there should be inserted the words "or after an examination by the College of Preceptors on subjects to be fixed from time to time by the Council."

The *Secretary* stated that a letter had been received from Mr. Powis, Secretary of the Royal Veterinary College, in reference to the case of those rejected students who at the recommendation of the examiners had been put back for six months. He represented the case as one of hardship on students who had entered the College prior to the enactment of Bye-law 35.

The President moved that Bye-law 35 should not be held to apply to students who joined prior to its enactment. The motion was seconded by Mr. Dray, and carried.

Fellowship Degree.

Two letters were read, dated January and February last, from candidates for the Fellowship Degree, enclosing the required certificates of qualification.

The *President* decided that no examination should take place until there was the requisite number of candidates necessary to convening the special court of examiners.

The Council then adjourned.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Monthly Council, March 13th, Col. Kingscote, C.B., M.P., in the chair.

VETERINARY COMMITTEE.

The *Hon. W. Egerton* (chairman), reported that Mr. Duguid had presented the following report on the outbreak of anthrax in Lincolnshire:

"On Monday, Feb. 18th, 1878, I received information of a most extensive and rapidly fatal outbreak of splenic apoplexy in a herd of cattle belonging to Mr. W. N. Mason, Rigsby, Alford, Lincolnshire. So great and sudden was the mortality that forty-six animals died in two days, and it was at first supposed that they had been poisoned.

"Mr. Gresswell, veterinary surgeon, Louth, was called in, and after a careful examination of the affected animals, and a *post-mortem* of three that had just died, he pronounced the disease a severe form of splenic apoplexy. I examined portions of the spleen and other organs sent me,

and found the long red bacteria characteristic of this malady in the blood obtained from them.

"It is seldom that we find more than a few animals of a herd succumb in such outbreaks; but in the present case only two animals survived out of a total of fifty that were in the portion of the buildings where the disease appeared. One of these, a yearling heifer, was affected, and recovered; the other, a bull, had only been brought to the farm two days previous to the outbreak. The animals were of different ages. Two were fatting cows; twenty-two were cows in calf or giving milk; one was a suckling calf; and the remainder were yearlings. The animals were all apparently well on the evening of Friday, Feb. 15th, but on Saturday morning the herdsman found one cow lying dead, and twenty-one more died during the day, and by Monday morning forty-six had succumbed; one more died on Monday, and the suckling calf on Tuesday, making a total mortality of forty-eight animals from the 16th to the 19th. In another portion of the buildings twenty-six heifers in calf have remained healthy. At the request of Dr. Sanderson I visited the farm, with a view of ascertaining, if possible, the cause of the outbreak, by inquiring into the feeding, water supply, and state of the buildings. The farm is situated on the chalk hills, and quite removed from the extensive marsh lands of the county. The farm buildings are in very good condition, and are situated on a slope, with a north-east exposure, the substratum being chalk. A brick wall divides the buildings into two; the upper portion is divided into four open yards, in which twenty-six heifers in calf have been kept all the winter in perfect health; the lower portion consists of two open yards, in which the yearlings were kept, and a range of covered stalls, in which the older animals stood. In this lower portion the mortality occurred, and, as already stated, only two out of fifty animals survived.

"The water supply is the same throughout. The rainfall collected on a chalky road that runs through part of the farm is stored in a pond, from which it is supplied by syphon and ball-taps to the whole of the buildings. The pond is fenced in so that no animals can get into it, and from the fact that it stands above the level of the yard there can be no drainage from them into it. The water deposits a considerably amount of fine chalky deposit, and contains organic matter, probable from the decomposition of vegetable mattre, straw, &c., blown into it, An analysis of the water has not yet been made; there seems no grounds for suspecting this as the cause of the disease.

"Although the water supplied to all the animals was the same, the feeding in the upper yard was totally different from that where the malady appeared. The animals that are still healthy were fed on linseed and cotton cake (about $1\frac{1}{2}$ lb. of each daily) and barley-straw.

"The animals that became affected were fed on linseed and cotton cake in various proportions, the milch cows and the cows in calf about 3 lbs. daily, and the yearlings about $3\frac{1}{2}$ lbs. The feeding beasts were receiving 5 lbs of cake daily, and about 3 lbs. of a meal of ground rice, wheat, and barley. In addition to this the whole of the animals in the lower portion of the buildings were receiving brewers' grains and barley-chaff.

"The grains were brought fresh from the brewery, and stored for a short time in old sugar casks. On the 14th February some fresh porter grains were fetched from the brewery. The lad who brought them stated they had a peculiar odour, which made him feel sick. The grains and chaff were mixed and allowed to lie for twenty-four hours; the animals were fed with this mixture on Friday evening, and the mortality began on the following morning.

"Dr. Voelcker has analysed a sample of these grains, and found nothing poisonous in them. From the fact that only those animals fed with grains fell victims to the disease, it seemed of the first importance to feed some more animals with them, and thus prove whether the grains were the direct cause. Two animals have been fed at the Brown Institution for ten days with some of the grains sent up by Mr. Mason, and they have continued in perfect health.

"I have further to report that on March 6th a bullock was found dead in another yard on the same farm, but at least half a mile from the scene of the former mortality. A *post-mortem* examination made by Mr. Gresswell, who was again called in, showed that the cause of death was splenic apoplexy. This was one of a lot of fifteen bullocks, about two and a half years old, that had been fed for the past six weeks in open yards with 5 lbs. daily of a mixture of equal parts of linseed and cotton cake and barley-straw. Mr. Gresswell, observing some premonitory symptoms in some of the others, ordered a change of food, and instead of cake gave bran mashes, a few roots, and no straw, in addition to which he prescribed hyposulphite of soda medicinally.

"I visited the farm again on the 7th March, and Mr. Cope, the chief inspector of the Veterinary Department of the Privy Council, arrived on the evening of the same day.

"On Friday, March 8th, the whole of the remaining fourteen bullocks were examined, and four showed an internal temperature of 103° or over. These were separated for closer observation.

"On Saturday the temperature had declined, and up to yesterday (March 11th) no further cases had occurred.

"In this instance only one animal died, and it is very doubtful whether this was a fresh outbreak or whether it was a continuation of the former, due to some communication between the two yards. The same man had fed all the animals.

"The water supply to this yard was separate from the other; and, as there seemed a slight possibility of drainage from the yard getting into the storage-pond, water is now being carted from a well for the supply. It has long been known that in this disease bacteria are found in the blood, and recent experiments show that these pass through certain stages of existence when cultivated in some animal fluids. In connection with the present outbreaks experiments are being conducted to ascertain if they are capable of multiplying in other than animal fluids, and if such proves to be the case a most useful and interesting field of observation is opened up in connection with the causes of such outbreaks."

Dr. Voelcker stated that he had examined the grains and chaff which had been given to the animals in question, and had found no animal or vegetable poison, adding some further information in reference to the action of certain classes of food.

Mr. Dent expressed the hope that the Veterinary Committee would thoroughly investigate this case, which was one of those ravages of a disease which had so frequently baffled the efforts of veterinary surgeons to arrive at its cause.

Professor Brown said that two distinct views were at present held on this subject. Dr. Burdon-Sanderson and other of the most advanced pathologists held that in all cases it must have been caused by contagion from a previous outbreak, as certain organisms or their germs were always found in the blood of animals affected with splenic apoplexy. This view had never yet been properly tested in this country. If it were true that these organisms or their germs were essential to the production of the

disease, all questions connected with the food which had been given to the animals had no longer any importance; and it was perfectly true that cases of the disease had been known to occur under all the conditions contemplated by the holders of this view. On the other hand, a large number of eminent practical veterinary surgeons held that the disease only occurred under peculiar conditions of soil and herbage, such as would be caused by the absence of drainage, by excessive stocking, by abnormalities of climate, and so forth; but the difficulty attending on this view was that the disease only occurred on those farms on certain occasions, and generally at very long periods.

The report of the committee was then adopted.

SELECTION COMMITTEE.

Earl Cathcart reported the recommendation of the committee that Mr. George Fleming, veterinary surgeon 2nd Life Guards, be elected an honorary member of the Society in recognition of his eminent services to veterinary science. This report was adopted.

PROPOSED METROPOLITAN MEETING OF THE ROYAL AGRICULTURAL SOCIETY.

Subsequently to the meeting of the Council of the Society a public meeting, convened by the Lord Mayor, was held in the Saloon, Mansion House, "to promote the holding of a great Agricultural Exhibition in London, in the year 1879, under the auspices of the Royal Agricultural Society of England." The attendance was numerous. The Lord Mayor presided; and among those present were the Duke of Richmond and Gordon, the Duke of Bedford, the Duke of Somerset, Earl Cathcart, Lord Skelmersdale. Lord Vernon, Lord Winmarleigh, Mr. J. Holms, M.P., Colonel Kingscote, M.P. (President of the Royal Agricultural Society of England), Mr. William Wells, the Hon. G. Waldgrave Leslie, Alderman Sir T. Dakin, Alderman Sir C. Whetham, Alderman Sir T. White, Mr. W. A. Gilbey, Mr. S. B. L. Druce, Mr. H. M. Jenkins, Professor Simonds, Sir J. Heron Maxwell, Mr. T. C. Scott, Sir John Bennett, &c.

The Lord Mayor, in opening the proceedings, said he knew very little about the arrangements for the projected Exhibition; but he felt that it was a great work which had been taken in hand, and that it was likely to prove beneficial to the nation at large, and hence he had thought it his duty to accede to the request of the Royal Agricultural Society that he would allow that meeting to be held there. He had hoped that some one else would preside, but it was considered best that he should occupy the chair; and he did so with the knowledge that he was surrounded by a number of gentlemen who perfectly well understood the matter, and he hoped the issue of the meeting would be satisfactory (cheers).

Alderman Sir T. Dakin moved the first resolution, viz.:

"That in the opinion of this meeting it is desirable to promote the holding of a great Agricultural Exhibition in London next year under he auspices of the Royal Agricultural Society of England."

He said that resolution must commend itself to the judgment of all who were assembled. The fact of such a movement emanating from the Mansion House was an omen of success; but apart from that, he could not consider the operations of the Royal Agricultural Society of England during the last forty years, and the great help which it had afforded to one of the most important branches of commerce and production,

without wishing the scheme every success. The last Agricultural Exhibition in London—that of 1862—was unfortunate in having to compete with a rival Exhibition which diverted from it a large share of public attention. Next year there would be no such rivalry, and he felt certain that there would be a most successful show (cheers) Whatever locality might be fixed upon the modes of access would be much more convenient than they were before, and that would no doubt very much contribute to the general success.

Mr. John Holms, M.P., said he felt much pleasure in seconding the resolution. He regarded that movement as one of very great importance to the country at large, and he was glad that the Lord Mayor had undertaken to inaugurate it through the medium of that meeting, and that the Royal Agricultural Society of England would carry it out. He thought they would improve their position by extending the title of the show, and calling it an Agricultural and Food Exhibition. He believed that if that were done a much larger amount of public interest would be attracted to it. Since the last Exhibition was held very great progress had been made in the food supply of the people, apart altogether from corn. He found that in 1876 the imports of food for man amounted to £155,000,000, against £88,000,000 in 1862; and he thought that if they were to extend the character of the Exhibition, so as to include the general supply of food to the country, they would thereby make it much more interesting and more profitable to the nation. During the last year or two great strides had been made in the importation of dead meat into this country. Last year there was a Committee of the House of Commons, he himself being a member of it, to inquire into the question of the import of live animals and of dead meat, and some very interesting features came out. The importation of dead meat had now almost reached a scientific position, and men abroad knew, it appeared, precisely how to kill, cure, and export meat which was intended for consumption in this country. Our own butchers had much to learn from those of New York and Boston. Meat put on board a vessel in America could be kept for almost any length of time, and that question was well worthy of attention in connection with the Exhibition next year. As regarded fish, it appeared that the imports increased from £300,000 in 1862 to £1,460,000 in 1876; while that in fruit and spice rose from £2,400,000 to £7,600,000.

The Duke of Richmond and Gordon, in supporting the resolution, said, intimately connected as he had been from his earliest days with the agriculture of this country and the agriculturists of the kingdom, he esteemed it a very high honour to be permitted on that occasion to make a few remarks on the subject before the meeting. He had for many years been a member of the Council of the Royal Agricultural Society of England, and he thought he might venture to claim for that society that it had done a very great deal to promote the agriculture of the United Kingdom (cheers). Those who looked back to the shows which had taken place in all parts of the Empire must feel that their desire had always been to impress on people in all parts of the country what could be done by means of energy and enterprise to promote the improvement of agriculture. The late lamented Prince Consort felt a deep interest in the operations of that society. They had been reminded that in 1862 an Exhibition took place in Battersea Park; but the faces he saw around him, combined with the remarks which had been made, led him to hope that next year's Exhibition, under the auspices of the Royal Agricultural Society, would exceed in interest and importance that to which he referred. He quite agreed with the gentleman who spoke last as to

the great importance of the dead-meat trade; but as he would probably have other opportunites of expressing his views on that subject, he would not detain the meeting by entering into it then. The great object of agriculturists ought to be to provide the vast consuming community of this country with the greatest amount and the best quality of food that could be produced, and that was an object which the Royal Agricultural Society had desired to assist them in carrying out to the best of its ability. Those who compared the state of the stock of this country with its state thirty or forty years ago would see that it had improved in a much larger and more rapid degree than any one could have anticipated. He hoped the Exhibition of 1879 would show the world that the United Kingdom was behind no other civilised country in agriculture (cheers).

The Lord Mayor, in introducing to the meeting Alderman Sir C. Whetham, remarked that he would in all probability be his successor next year, and as such would take a very active part in the proceedings of the Exhibition.

Sir C. Whetham, in briefly supporting the resolution, said he earnestly hoped that the Exhibition would not be far off the City of London, believing as he did that the nearer it was to the heart of the metropolis the greater would be its success.

The resolution was then put and carried.

The Duke of Bedford moved—

"That a committee be formed to carry out the object of the previous resolution, to collect subscriptions, and to co-operate with the Council of the Royal Agricultural Society."

Mr. W. A. Gilbey, in seconding the motion, expressed his confidence in the success of the scheme, and remarked that even in 1862 the number of implements exhibited was 5,000, and the number of cattle 1,986, and that 124,000 people attended.

Mr. W. B. Botly supported the resolution, and it was adopted.

The Hon. George Waldegrave Leslie moved—

"That the following noblemen and gentlemen be appointed a London Agricultural Exhibition Committee, with power to add to their number, and to appoint an executive committee and such sub-committees and officers as may be deemed necessary."

[A long list of names was appended, including nearly all those given above, and also that of the Duke of Westminster.]

Lord Skelmersdal, in seconding the resolution, spoke of the great success of the Manchester and Liverpool shows, as showing how much greater was likely to be that of one in the metropolis.

The resolution having been agreed to,

On the motion of *Sir J. Heron Maxwell*, seconded by *Mr. T. Scott*, it was resolved—

"That, in the opinion of this meeting, it is desirable that the Exhibition should, if possible, be held in Hyde Park; and that the Committee now appointed, in conjunction with the Council of the Society, be requested to take the necessary steps with a view to obtain the sanction of his Royal Highness the Duke of Cambridge (as Ranger of Hyde Park) and the First Commissioner of Works."

Colonel Kingscote, M.P., moved, and *Lord Winmarleigh* seconded, a vote of thanks to the Lord Mayor for presiding, and this having been carried by acclamation, the meeting separated.—*Daily News.*

At the first meeting of the Committee, which was held on the 20th inst., the names of several noblemen and gentlemen were added to the

list, and letters were read from the Dukes of Westminster and Buccleuch, consenting to join the Committee, and one from Mr. John Holms, M.P., who stated that he had made some inquiry as to extending the Exhibition of 1879, so as to include food generally, and had found that the Committee might expect very considerable support from those interested, and he believed that some of the great City Companies would be inclined to give them a grant of money.

Colonel Kingscote, M.P., reported that in his capacity as President of the Royal Agricultural Society he had waited upon his Royal Highness the Duke of Cambridge, the Ranger of Hyde Park, and the Duke had quite convinced him of the utter impracticability of holding the Show in Hyde Park, even if the park could afford the necessary accommodation, which was very doubtful.

It was arranged that the various Livery Companies of the City, the members of the Corn, Hop, Stock, and other Exchanges, and others interested in British agriculture, should be invited to co-operate with the Mansion House Committee in raising the funds needed to meet the incidental expenses of the Exhibition. For that purpose no definite sum could yet be fixed, but about £10,000 was casually mentioned. The Lord Mayor was appointed treasurer of the fund, and it was intimated that he would gladly receive subscriptions at the Mansion House in aid of that object.

The Duke of Bedford expressed his willingness to subscribe £100, and Colonel Kingscote said the Duke of Westminster would contribute a similar sum. Sir Charles Whetham undertook to bring the matter before the Corporation of London at the proper time.

The meeting then adjourned until Wednesday next at noon.

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

The Annual General Meeting of this Society was held on Wednesday, the 16th February, in the London Hotel, Edinburgh, Mr. Cunningham, V.S., Slateford, the retiring President, presiding. Among those present were:—Professors Walley, Baird, and Vaughan; Messrs. Tomeg (East Calder), Aiken, (Edinburgh), Robertson (Kelso), Storie (East Linton), Balfour, senr., Balfour, jun. (Kirkcaldy), Boyd (Melrose), Mitchell (Bathgate), Borthwick (Kirkliston), Reid (Leith), Sproule (Dundee), McFarlane (Greenock); and the Secretary.

Letters of apology were received from several members who were unavoidably absent.

A letter was read from Mr. Cumming, M.R.C.V.S. Edinburgh, who at the previous meeting had been elected to the office of President for the current year, expressing his regret that circumstances would not permit him to accept that honour.

A letter was also read from Principal Williams, of the New Veterinary College, stating that he felt reluctantly obliged to resign his membership.

Mr. Robertson, regretted the above resignations, and, on his

motion, it was agreed to allow them to lie on the table till next meeting.

On the motion of *Mr. Cunningham*, Professor Baird, of the Dick College, was elected to the vacant chair, and forthwith entered upon his duties.

Mr. Cunningham exhibited an interesting stuffed specimen of Sysomian monstrosity in a calf. The dam was a cross-bred cow, between Ayrshire and Shorthorn, and the case having been one of breech presentation, delivery had been effected with comparative ease. Contrary to what is usually seen the two heads were perfectly developed and beautifully formed. He had made a dissection of the body with a view to ascertaining whether the abnormality had arisen from preternatural development, occurring from a single ovum, or whether it had been the result of partial fusion of two fœtuses at an early period of their development. He had come to the latter conclusion as, although the thorax and abdomen of the animal seemed single on the exterior, he had found in the former two hearts with their blood-vessels, and in the latter traces of two sets of digestive organs.

Mr. Storie exhibited the enlarged spleen of a mare which had died the day previous. The animal had been working till within a week of her death. The new growth was pronounced by Principal Walley to be one of lymphadenoma, this being the largest of the kind he had ever seen.

Mr. Cunningham then read a paper "On the Position and Standing of a Veterinary Surgeon as Inspector under the Contagious Diseases (Animals) Act," and proceeded as follows:

One can scarcely read over the present Act, and schedules, and orders of council, without being struck with the fact that the term "veterinary surgeon" is rarely if ever mentioned. Of veterinary surgeons as individuals, or as a body, little or no notice is taken. They rank as inspectors, and are placed under the various local authorities, whose treatment of them is a study of itself. Power and authority, and considerable freedom of action are given, as is right and just, to the Privy Council, and in a lesser degree to the local authorities. Not unfrequently they are allowed to do as they deem fit and expedient; but for the inspectors certain duties, more or less clearly defined, are laid down, from which they must take care to deviate as little as possible, and they are seldom, if ever, left to the freedom of their own will. Is this the position a veterinary surgeon should occupy under a Contagious Disease Act? Cannot veterinary surgeons be trusted to do what is right and honourable without such an amount of supervision? Are they not as fit to carry out the requirements of the Act and possibly to suggest improvements, as the members of the local authorities, even though the social standing and position of many of the latter be far superior? It is a well-known fact that veterinary surgeons generally do not concern themselves much with questions as to the importation of non-importation of foreign animals; with what countries should be scheduled, and what not; with the levying of rates, carrying on of prosecutions, and such like business of the Act. They willingly leave all these matters to other and abler heads, better acquainted with such subjects, and more able to deal with them; but when it comes to the details of the inspection of a district,

they thought they were on their own ground, and should not be the mere agents of the local authorities, but should be free to a much greater extent than at present to do the very best they could to detect, check, and if possible eradicate, the respective contagious and infectious diseases.

It would not be difficult to show, that had this been done at first, much better results would have followed. They heard a good deal of this new and amended Act and its improvements (and I am sure we all hope they will be thorough improvements, though from the little I have seen of the Bill I am disappointed with it in many respects), but how often in this very room year after year have many of these improvements and others been talked of? How long ago is it since we wished the thirty days extended to sixty, and in exceptional cases to three or four months? How often have we declared that policemen were unfit to act as inspectors, and that chief constables should not interfere with the inspectors? How long is it since veterinary surgeons declared that the leaving each local authority to do very much as seemed fit to them with pleuro-pneumonia and foot-and-mouth disease was a bad system, and that one broad, well-defined course should have been marked out for them to pursue? And I cannot help saying, that had many other suggestions thrown out by members of our profession been embodied in this new Bill, it would have been a much better measure. I fail to find in it any directions as to the slaughter or non-slaughter of animals suspected to be affected with pleuro-pneumonia—see no clause prohibiting the bringing in of fresh animals into places already infected, and placing them among animals actually suffering from the disease. Dairymen's byres are to be subject to inspection (for milk purposes only, however, I incline to believe), but cattle dealers are to be left in peace and quietness. The compensation scheme appears to be left as at present. Yet we have often said it would stand considerable improvement, and so on. Ever since the Act came into operation the cry among us has been for improvements such as these, and after ten long years we have now the pleasure of seeing a few of them proposed, and can only hope that in something less than other ten years a good few more of them will be put in operation. However, better late than never. Slowly and surely, I believe, the veterinary surgeon will yet gain his proper position, even as an inspector. Let his duties be clearly defined; make him responsible for his actions to the local authority or any other corporate body; but let him not be their mere paid agent or servant. Give him a little discretionary power and freedom of action, and, so long as he shows that he is acting rightly and for the public good, let him be supported.

This happy state of matters cannot come a minute too soon, for I speak advisedly when I say that many men who, on being appointed, were willing to work and do the very best in their power to root out and keep their districts free from pleuro-pneumonia and foot-and-mouth disease and kindred diseases, have become so disappointed—to use a mild term—with the way in which they have been treated as inspectors that they have lost the interest they once had in their work. They simply do what they are required to do, and think no more of the matter. This is not a desirable state of things, but it might easily be remedied. Let us now glance at a few of an inspector's duties.

1. His duty as to suspected cases. Every nows and thens an inspector meets with some unhealthy, miserable object of an animal, standing often beside others in high condition and valuable. Plainly tubercle, acute or chronic disease of the lungs or liver, or some such disorder, is present; but other symptoms also exist, which indicate pleuro-pneumonia, and

which render it almost impossible for the inspector to decide whether or not it really exists. What should be his duty in such a case? Before and after the Act came into operation I have isolated such animals, kept them for several days or a week, till I could make up my mind, and always regretted it. Chronic pleuro-pneumonia, evidently of long standing, disclosed by *post-mortem* examination, I remember seeing followed by the death from common pleuro-pneumonia of four out of the five of the remaining animals. Tubercle, with pleuro-pneumonia in its first and second stage, preceded by six weeks two outbreaks of the same disease in byres containing thirty or forty cows each, running its course with the usual results; and I have no doubt many now present could give similar instances. Slaughter all such suspicious cases, I would say; and if after death it is found that only tubercle is present, or that common disease of the lungs, or the presence of a foreign body—needle, pin, or such like—in the chest has caused death, the owner will generally only be too glad that there is no pleuro-pneumonia to ask compensation, and if he does insist on it, then I believe the public money will not be greatly wasted though he gets it. The present Act, however, gives no power to act in this way; and if a clause authorising the slaughter of such cases, and the giving of moderate compensation, could be inserted in the new Bill, it would do little harm and a great deal of good. Had such a clause been in the present Act the recent action in the Court of Session would probably never have been raised.

2. And, more particularly, can an inspector order slaughter in pleuro-pneumonia? Lately, from the bench of the court of session, many of us heard the strange opinion advanced, that the local authority only have this power; that they cannot authorise an inspector to order the slaughter of any animal suffering from pleuro-pneumonia; and that if the latter does so he exceeds his duty, and as a consequence the law will not protect him. With all due deference, and with the very greatest respect for Lord Rutherfurd Clark, I cannot see how this interpretation of this section of the Act can be its true meaning. The Act of 1869 did not at first enjoin the slaughter of animals affected with pleuro-pneumonia—made, in fact, no special provision for it, and consequently the duty of an inspector described in any of the sections of that Act cannot have reference to the slaughtering of such animals. Yet section 54, of which so much was made, is a section of that Act. Now section 54 refers only and solely to an outbreak of disease, and to the laying on of the rules of the seventh schedule, which constitute the premises an infected place, and says nothing whatever about slaughter; and it humbly appears to me that the duty of an inspector regarding the slaughtering of animals affected with pleuro-pneumonia was judged of, in a great measure, by the rules which describe his duty and mode of precedure with respect to an outbreak of disease and the constituting of an infected place.

As regards the movement of animals from an infected place, I think that the true interpretation of the Act is, leave is given to the owner to remove without a license an animal "for immediate slaughter," provided he complies with regulations to be from time to time made by the local authorities for ensuring such slaughter, and provided that he does not "carry, lead, or drive the animal, or cause it to be carried, led, or driven along a highway or thoroughfare." An inspector cannot give a license to remove a diseased animal along a highway or thoroughfare, or, in fact, anywhere; he can only give a license for the removal of animals certified by him to be free from pleuro-pneumonia, and which have not been in the same shed or herd with animals affected with that disease, though this, I have good authority for saying, is the true meaning of

the Act. I think a little exception might be made with respect to carrying animals in the "float." Some byres and premises, especially in towns, are so situated that removal to the nearest slaughter-house is a great advantage, and in fact almost a necessity. I am not, however, myself very fond of sending diseased animals to the slaughter-house. I think if a few more of them were buried instead of being eaten it would be an improvement. And ever since I saw a badly diseased lung fished out of the manure barrow at the Edinburgh slaughter-house I have sent very few animals there.' The contents of that barrow would in all probability be emptied into a boat on the neighbouring canal, from which it would find its way to some farmer's field. And surely a badly diseased pleuro-pneumonia lung on the top of a manure heap with cattle around is not an improbable sight nor a very pleasant one.

One word as to the use of the thermometer and the appointment only of members of the Royal College of Veterinary Surgeons as inspectors. The thermometer, no doubt, is very useful in its way, but the inspector who cannot diagnose pleuro-pneumonia without the instrument will scarcely, I fear, be able to recognise it with it. And it has long been the opinion of many inspectors that the ascertaining of internal temperature and dividing the animals into two lots is just about as effectual a means of thoroughly inoculating the whole herd as could be practised, and they therefore do not practise it. The less movement or mixing up the better at an infected place.

With regard to members of the R.C.V.S. only as inspectors, that clause of the Bill will not, I hope, pass without opposition. At the time many of the holders of the Highland Society took their diploma, the Royal College of Veterinary Surgeons was not doing very fairly towards the Scotch schools, they were quite justified in taking only the Society' certificate. These men are quite the equals of the members of the R.C.V.S. in every respect, and quite as well qualified to act as inspectors under either the present or any future Contagious Diseases (Aminals) Act.

Some discussion afterwards took place on the same subject, but on it being intimated that it was proposed to discuss the new Contagious Diseases (Animals) Bill at the next quarterly meeting, the matter was allowed to drop. The proceedings then terminated, and the members and friends afterwards dined together. JOHN MCFADYEAN, Secretary.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

The Fifty-fourth Quarterly Meeting of the Association was held at the Medical Institute, Hope-street, on Friday February 22nd, 1878. Mr. Wm. Woods, Vice-president, in the chair.

There were present:—Messrs. Hayes, Morgan, Reynolds, Wm. Elam, C. W. Elam, Stevenson, Moore, Watson, and Lloyd, of Liverpool; A. B. Wren, Birkenhead; J. S. Menzies, St. Helens; T. Greaves, T. Hopkins, and E. Falkner, of Manchester; Wm. Dacre, Altrincham; Wm. Whittle, Warsley; and the secretary.

Letters and telegrams of apology were received from Messrs. J. Gerrard, J. and A. Lawson, Sam. Locke, T. Taylor, J. Carless, H. J. Cartwright, J. H. Welsby, and W. Lewis.

The minutes of the previous meeting were read and confirmed. A letter was received from Mr. T. G. Procter, acknowledging the honour of his election as President of the association—but stating that he could not undertake the duties, and therefore begged to be allowed to decline the acceptance of the office.

It was proposed by *Mr. Reynolds*, seconded by *Mr. Morgan*, and carried unanimously—that while receiving Mr. Procter's refusal to accept the office of president, they wished to convey to him through their secretary their disappointment and sorrow at being thus deprived of his valuable services in that capacity and to assure him that the association would have considered itself honoured by his acceptance of the office.

Mr. Wm. Whittle was then unanimously elected president of the association, and the following gentlemen were duly elected members of the association:—Mr. A. B. Wren, Birkenhead; Mr. Darwell, sen., Northwich; Mr. Darwell, jun., Northwich; and Mr. Menzies, St. Helens.

Mr. Reynolds then resumed the discussion of Mr. Greave's paper on "Germs: the part they play in the production of some diseases; and disinfectants: the part they play in preventing and modifying disease." He commenced by referring to the great importance of the subject, and the modification which the germ theory, as conceived by its advocates was likely to effect in the treatment and prevention of certain diseases—should it become thoroughly established. But while acknowledging the great value of the experiments which had been made with reference to this subject, and agreeing in the main with the facts recorded—so far as they went as the result of these experiments, yet he did not consider that the doctrine, "that certain contagious diseases were produced by certain varieties of bacteria" had by any means been proved—and instanced several contagious diseases which in his opinion, did not fit in exactly with this theory. Such as glanders, a contagious disease which in his opinion was capable of being produced without infection by certain circumstances and surroundings. Variola Ovina, another contagious disease which was said to be incapable of being propagated by inoculation with the blood of an animal affected, and even splenic fever itself. That disease, which above all others, was considered by the germ theory advocates as the one most certainly proved to be due to the presence of the *Bacillus anthracis*. He said it was a curious fact that while the *Bacillus substilus* and the *Bacillus anthracis* were identical in appearance that cattle should not be liable to septicæmia—while they were very liable to anthracoid diseases.

If contagious diseases are due to germs, these germs must be always present to a greater or less extent—and consequently both man and animals must be constantly liable to be brought

into contact with them—but as a very small percentage of either under ordinary circumstances become actually affected by such diseases—it follows that other factors are essential to the production of disease—such as "the liability of the subject—germs or other conditions present, &c.

He concluded by urging every member to do what he could by recording every fact relative to the subject, and ventilating them at such meetings as the present in order to throw light upon a subject of such vast importance to the profession.

Mr. Greaves referred to the experiments of Prof. Tyndall and others in support of the germ theory—and was of opinion that although bacteria were found in healthy as well as in diseased constitutions—and that no difference might be discoverable in their physical characters that nevertheless, their vital actions were as specifically distinct as their origins were. As a powerful disinfectant he strongly recommended carbolic acid in the form of fumes.

Mr. C. W. Elam considered that the power of producing a disease lay not so much in the germ as in the individual affected by it, and referred to the fact that some people spent almost their entire lives in the midst of infectious diseases, and yet escaped infections—while there are others who have a peculiar indiosyncracy, and cannot be successfully vaccinated. And even parasitic germs do not always fix on healthy living tissue. He then described a steaming apparatus—which he considered a most efficient mode of applying the fumes of carbolic acid as a disinfectant.

Mr. Dacre referred to glosso-anthrax—which according to Mr. Greaves, was a disease to which this germ theory would more particularly apply—and related the history of a herd of young cattle which he attended for this malady. His treatment was—a purgative change of diet, and the insertion of setons into the whole of the herd. This treatment proved successful in arresting the further spread of the disease. If, therefore, this disease be due to the presence of a living germ, what explanation can be given of the success of this mode of treatment. He was of opinion himself that the principle cause of this disease was dietetic in its character.

The President said that he was also of opinion that those anthracoid diseases were due to dietetic causes, and referred to the fact that among the sheep reared and fed on his own farm, he never saw a case of anthracoid erysipelas. But when the same sheep were removed to different pasture and then brought back to his own farm, a number invariably become affected with the disease.

Mr. Hopkins considered that it was only the products of bacteria that did the harm—by acting on the system as a poison, and that when the system was vigorous it would be able to resist their poisonous influence. He considered that the advantage of the antiseptic mode of treatment in surgery had been thoroughly

established and that hospital gangrene had became comparatively rare since its introduction.

Mr. Watson was of opinion that internal disinfectants ought to be more largely employed in the treatment of contagious diseases, and instanced several cases where the internal administration of carbolic acid had been very beneficial.

Mr. Moore referred to the fact recorded, that the fungus spores found on orange peel were identical with the spores in whooping-cough, and that they were shown by actual experiment to be capable of producing the disease.

Mr. Reynolds in his reply stated that he was somewhat disappointed at the result of the discussion—inasmuch as his own opinion was very much in favour of the germ theory of disease—and he had adopted the opposite view of the question on the present occasion in order: 1st. To raise a discussion; and 2nd. To give him an opportunity of bringing forward some of the difficulties against its full acceptance which presented themselves to his own mind in the hope that the members might be able to remove them in their discussion of the subject.

DUNCAN HUTCHEON, *Hon. Sec.*

Veterinary Jurisprudence

SINGULAR ACTION AGAINST AN INSPECTOR OF CATTLE.

SMITH *v.* WILLIAMS.

IN the Court of Session on Thursday, January 24th, before Lord Rutherfurd Clark and a jury, an interesting action was tried—the first of its kind we believe—craving £40 as damages against an inspector under the Contagious Diseases (Animals) Act, the proceedings being based upon a breach of the statutory regulations by the official, who had ordered the slaughter of two cows, which, supposing them to have been diseased, could only properly be slaughtered at the order of the local authority. The pursuer was James Smith, formerly dairyman, Liberton House, Liberton, now residing at Causewayside, Edinburgh, and the defender William Williams, Principal of the New Edinburgh Veterinary College, one of the inspectors under the Contagious Diseases (Animals) Act, 1869.

The Dean of Faculty and Mr. Black appeared for the pursuer, and the Solicitor-General and Mr. Makgill for the defender.

A good deal of evidence was led, some of it of a conflicting nature, to the effect that in May last the defender ordered the slaughter of two cows which were alleged to have been suffering from pleuro-pneumonia. The defence maintained that both animals were diseased, one suffering from pleuro-pneumonia, and both ill with congestion of the lungs, if not both suffering from pleuro-pneumonia. On the other hand, the pursuer's case was that both animals were not suffering from pleuro; and in support of this there was the testimony of Principals Walley and M'Call, who had examined the lung of one of the animals and found it

to float in water, though the symptoms in the live animals might readily have been mistaken for those of pleuro. After a lapse of seven months a number of veterinary men had been shown a preserved piece of the rib and pleura of one of the dead cows, and they had no hesitation in aaying that the animal had suffered from pleuro. Other evidence was called by the defence disputing Smith's right of ownership, since he had been largely assisted by a brother-in-law; also endeavouring to show that the animals were absolutely worthless; that it mattered little to the proprietor by whose order the cattle were slaughtered; and that the pursuer had actually in the first instance made application to Professor Williams with the express object of getting the cattle removed to the slaughter-house, so that in point of fact the animals were not removed against the will of the pursuer. About this latter contention, and also regarding other points, the evidence was somewhat contradictory.

After hearing evidence and counsel on both sides, Lord Rutherfurd Clark, in directing the jury, said the first question necessarily was whether the cows which were slaughtered did in point of fact belong to the pursuer. Of course, if they were of opinion that the cows did not belong to the pursuer, he could not obtain a verdict. Assuming that they did belong to the pursuer, the complaint was that they were wrongfully slaughtered by the defender or his order. The wrong was said to consist in the defender having ordered them to be sent to the slaughter-house to be there slaughtered because they were affected with a disease called pleuro-pneumonia. On the other hand, in opposition to that, defender said he was a public officer; that what he did was done in the execution of his duty, and in the honest belief that he was acting within the statutory powers; and that although he may have been wrong in that belief, yet he cannot be made liable in damages. They would have to consider the legal position of the parties. On the 29th or 28th of May these cows were ordered to be sent to the slaughter-house, and slaughtered there. The Act under which the defender acted as one of the inspectors was one of great public utility, and it placed in the hands of the public body, who were called upon to execute it, very important statutory powers intended for the benefit of the general public, although they might sometimes press somewhat heavily. But those powers must be executed by the body to whom the Legislature had confided them; and further, they must be executed in the manner in which the Legislature had directed. If they were not exercised by the body or person to whom the Legislature had confided the exercise of those powers, then they were not properly exercised; nor were they lawfully exercised except in the manner directed by the statute. Now, one important part of the local authority's powers was contained in the 54th and 56th section of the statute under which the inspector acted. He was not going to trouble the jury with reading those clauses which, so far as he could judge, were not very difficult to construe. The first section directed that when an inspector found pleuro-pneumonia in his district, he shall make a declaration under his hand to that effect, and shall deliver notice of same to the occupier of the field or premises within which such disease is found. It was obviously a written declaration and a written notice that was here implied. In trusting the local authority and the inspector with very large and important powers, which were to be suddenly and sharply exercised, the Legislature at the same time required certain preliminaries to be observed so as to ensure the due fulfilment of those powers. The statute added, "and thereupon" (*i. e.* after the delivery of the declaration and notice) the Privy Council Rules applicable to pleuro-pneumonia shall come into operation. Then the matter was before the local authority, and the result

of the deliberation of the local authority was to continue, if it so pleased, the duration of those rules, which would then continue to exist until the cattle were destroyed. Under these rules no animal suspected of pleuro-pneumonia could be removed from premises except for immediate slaughter, and after getting a licence for its removal. His Lordship then referred to the evidence in the present case. It had been said that the pursuer, far from desiring that the animals should not be removed and slaughtered, was even anxious for their removal to be slaughtered, and that this led him to visit the defender on the day before the animals were killed. This was an important matter for consideration. The cows were left apparently on some arrangement with a person named Notman, who, on the Saturday, fearing the existence of some contagious disease, took the opinion of a local man on the matter, which, though not very explicit, was yet sufficient to make him believe that in point of fact the animals were affected with some contagious disease. This was communicated to Dunn, and thereafter to Smith, and on the Monday the defender inspected the premises, as was his duty under the Act as inspector. Now, it was important to keep in mind that if these animals were infected with this disease, then, of course, they could not be removed without official authority. It was said that the desire to get the cattle removed for slaughter was the reason which had led pursuer to visit the defender on the Monday morning. If the jury were satisfied that pursuer wanted the animals slaughtered, and that they were slaughtered really in accordance with his request, then it was difficult to see what the pursuer had to complain of as regards the defender. That was a matter of fact entirely for the consideration of the jury. The defender went out to make an inspection, and, having done so, he said that he thought both cows were affected with pleuro-pneumonia, and so intimated to pursuer. Here they came to a somewhat nice question. If the slaughter was done with the consent of the pursuer there was no doubt about the case; but assuming that pursuer did not, anterior to the inspection by defender, at all desire the slaughter of the animals, let them see what took place after Mr. Williams made his examination and reported the result to the pursuer. The pursuer said that after that examination was made, he (Mr. Williams, the defender) ordered the cows to be slaughtered, and did so in virtue of his office as inspector. Now he had to inform the jury that, so far as he could judge, the defender had no power in virtue of his office to order the slaughter of these cows. That matter rested entirely with the local authority, who could not devolve the whole of their statutory powers upon an inspector. The duty of the inspector after the inspection plainly was (assuming that he was not acting with the assent of pursuer) to give immediate notice, the effect of which would have been to bring into operation the statutory rules already referred to. But if the order was really assented to by pursuer, as being the best thing to be done under the circumstances, another question arose. This was an important point. Before pursuer could obtain a verdict it was necessary for him to prove that the order was wrongful to him. Although the order might be beyond defender's powers as inspector, it would not, however, be wrong if the pursuer assented. The cows were on the premises of Notman, who would not very likely be willing to retain cattle of the kind longer than he could help. He was unwilling to keep them after the alleged outbreak, and pursuer was at a loss how to dispose of the animals. Having pointed out that the order would not have been wrong if pursuer assented, there were two qualifications which should be stated in justice to pursuer. They must be satisfied as to whether the assent of the pursuer was not due to the assumption of unlawful authority by

the defender. If due to that it would never do to say the pursuer was bound by that. Then, if the assent was procured by defender giving an opiuion as to the condition of the cows which was not in good faith, or after due inquiry or on reasonable grounds, such assent would not be binding. Now, it seemed certain that one of the animals was not suffering from pleuro-pneumonia, but there was a great dispute as to the other. It had been suggested that the defender must necessarily have misconducted himself in making the examination, but that would be for the jury to say. They would hardly be inclined to think that a man misconducted himself because he happened to be in error, or that defender had necessarily misconducted himself. It was a disputed question as to whether one of the animals was suffering from pleuro-pneumonia. Professors Walley and McCall said no, while the defender and his assistant, Johnson, said it was, and the inspection of a portion of its body preserved by the defender led certain others to give an opinion to the same effect. Then, supposing both animals to have been affected with disease, the pursuer's case would not necessarily fail, because the defender had no right to give the order for slaughter. But in that case the cows had to be killed, and it was difficult to see how the pursuer could recover much damage. As to the antedating of the declaration and notice, which were served *after* instead of *before* the order for slaughter, his lordship could not say it was in any respect a right thing to issue documents which were antedated, still he did not think it had much to do with this case, which rested on the points to which he had referred. If they found for the pursuer they would have to consider what amount of damage should be awarded, and what loss had been sustained. To save any dispute about the law the best way to assess the damage would be to consider what was the reasonable value of the animals.

After half an hour's deliberation the jury returned a verdict for £20 damages in favour of pursuer, with expenses.—*North British Agriculturist.*

HAMPSHIRE LENT ASSIZES.

NISI PRIUS COURT.

Before Mr. Justice Grove.

Sherrott *v.* Ward.

Mr. Charles, Q.C., Mr. Bullen, and Mr. Ruegg, were counsel for the plaintiff; and Mr. Cole, Q.C., and C. Bowen for the defendant. The action was brought by Mr. Augustus Sherrott, M.R.C.V.S., to recover damages for the alleged misrepresentation by the defendant, Mr. Robert Ward, M.R.C.V.S., of Southgate Street, Winchester, of a veterinary surgeon's business in Winchester, which he sold to the plaintiff.

Mr. Charles having explained the leading facts of the case, stated the claim for damages was £600, but that £500 was the substantial claim.

The case occupied the greater part of the day, many witnesses being called, the principal being the plaintiff and the defendant.

On the conclusion of the evidence, in order to shorten the case, and to allow the jury to get away that night, both the counsel for the plaintiff and defendant agreed to forego their addresses to the jury. His lordship proceeded at once to sum up the evidence. He directed the jury that the question was, whether the defendant had substantially exaggerated, in his statements, the value of the business, or was the representation made without grounds on which to make it. They would also have to consider whether the business was competently managed, or whether

there was any want of skill or any neglect shown after it had changed hands.

The jury, after five minutes' consideration, said they found for the plaintiff £150 damages; defendant also to give up the unpaid promissory notes for £200.—*Hampshire Chronicle.*

PARLIAMENTARY INTELLIGENCE.

CONTAGIOUS DISEASES (ANIMALS) BILL.

HOUSE OF LORDS.—*Thursday, March 7.*

On the motion that the House go into Committee on this Bill,

The *Duke of Richmond and Gordon* said he would take the opportunity to supply one or two omissions in his observations on the motion for the second reading of the Bill. As regarded the cattle plague, they all agreed with the proposals of the Government, and the fact that animals affected with the foot-and-mouth disease had been imported from Spain in 1871, 1872, 1875, 1876, and 1877; from Portugal in 1871, 1873, 1874, 1875, and 1876; from Denmark in 1872, 1875, and 1877; and from Sweden in 1875; justified the regulation requiring the slaughter of all animals at the port of debarcation. He did not object to the Bill going into Committee, if the inquiry before the Committee were confined to the Irish trade.

The *Marquis of Ripon* did not think it would be convenient to reply then to the observations of his noble friend, but would reserve any remarks he had to make until the motion for going into Committee next week.

Lord Emly was understood to say that it was his intention to give notice to move that the clauses of the Bill should not apply to Ireland.

The Bill then passed through Committee *pro formâ* for the purpose of introducing verbal amendments.

REPORTED CATTLE PLAGUE IN LINCOLNSHIRE.

HOUSE OF COMMONS.—*March 7th.*

Mr. H. Chaplin gave notice that to-morrow he should ask Lord Sandon, or, in the event of his continued absence, the Chancellor of the Exchequer, whether the Government had received any information as to the truth of a report which had reached him that afternoon, that there had been an outbreak of cattle plague near Alford, in the country of Lincoln, and if so, what measures the Government would take with regard to it.

Friday, March 8th.

Mr. Chaplin asked the Chancellor of the Exchequer if he could state to the House whether it was true, as reported, that there had recently been an outbreak of cattle plague at Rigsby, in Lincolnshire; and, if so, what steps the Government had taken, or intended to take, for its suppression.

The *Chancellor of the Exchequer* said that in the absence of his noble friend (Lord Sandon) he had obtained a note from the department. He was told that no information had been received by the Government of any outbreak of cattle plague in Lincolnshire or elsewhere, but it was known that a fatal disease, which was believed to be splenic apoplexy, had occurred among the cattle at Rigsby on the 23rd of February last, and 48 cattle had died in the course of a few days. Information of a second appearance of disease on the same farm was telegraphed to the Lord President yesterday, and the chief inspector of the veterinary department was immediately instructed to proceed to the place for the purpose of making inquiries. Since he received that note a telegram had been received from the chief inspector, who stated that only one animal had died in the last outbreak, although four others showed signs of illness. The right hon. gentleman also read a letter which he had received from Mr. Burdon Sanderson, of the Brown Institution, to the effect that that gentleman was engaged in an inquiry on the subject, which had been instituted by the Royal Agricultural Society, and that as soon as he heard of the outbreak he requested the veterinary surgeon of the Brown Institution to investigate the matter on the spot. The veterinary surgeon had made two journeys, from the second of which he had not yet returned. He said that the disease was not cattle plague, but splenic fever, which was not a new disease, though outbreaks of so alarming a character as the present one had seldom occurred, and, from what was known of its nature and causes, it was not likely to spread. Mr. Burdon Sanderson added that at the next meeting of the Royal Agricultural Society he hoped to communicate facts which would throw light on its origin in the particular instances now in question.

TRANSIT OF CATTLE BY LAND AND SEA.

House of Lords.—*Monday, March* 11.

In reply to a question from *Earl Delawarr*,

The *Duke of Richmond and Gordon* said that there was no objection to lay upon the table the order of 1875 regulating the transit of cattle by land and sea, if it was moved for.

Earl Delawarr, in moving for the order, expressed his opinion that stringent regulations on the subject of cattle transport, especially from Ireland, should be embodied in an Act of Parliament.

CATTLE DISEASE IN LINCOLNSHIRE.

HOUSE OF COMMONS.—*Monday, March* 11.

Sir W. Lawson asked the Vice-President of the Council, with respect to the outbreak of cattle disease in Lincolnshire, whether the superintendent of police of the district took steps for having an analysis made of the food which the animals had been eating immediately before the outbreak of the disease, and whether any claim for compensation for the loss was being made on the Government.

Lord Sandon, who was received with cheers on his appearance after his indisposition, said the Government had no news of any fresh outbreak of this terrible disease. No claim for compensation had been made on the Government, and the case did not come without the Contagious Diseases (Animals) Act. Some food which had been taken had been analysed, and no poisonous agent was detected. The most experienced inspectors thought they had found the cause of the disease, though he was rather afraid of shocking the hon. baronet by mentioning what it was supposed to be. The inspectors said they imagined that this terrible disease was caused by drinking water. (Loud laughter and cheers.)

LICENCES UNDER THE CRUELTY TO ANIMALS ACT.

Mr. Pease asked the Home Secretary what number of licenses had been granted under the Cruelty to Animals Act, 39 and 40 Vic., c. 77; whether any licenses had been given up or withdrawn, if so, how many; and whether he had reason to suppose that the power thus granted had been in any case abused.

Mr. Cross said that twenty additional licenses had been granted beyond those of last year. Of these, three had expired and had not been renewed, and three had been cancelled. He had had many interviews with the most able and conscientious inspector who had taken such interest in this matter, and the inspector assured him that there was not the slightest ground for believing that there had been any abuse in any single case.

CONTAGIOUS DISEASES (ANIMALS) BILL.

HOUSE OF LORDS.—*Tuesday, March* 12.

On the motion to go into Committee on the recommitment of this Bill,

Lord Emly moved that it be referred to a Select Committee.

The *Duke of Richmond and Gordon* offered no objection, on the understanding that there would be no obstruction to the measure, and the motion was agreed to.

HOUSE OF LORDS.—*Friday, March* 15.

On the motion of the *Duke of Richmond and Gordon*, the Select Committee upon this Bill was nominated as follows:—The Lord President, the Duke of Somerset, the Marquis of Salisbury, the Marquis of Ripon, the Marquis of Abergavenny, Earl Spencer,

the Earl of Ellesmere, the Earl of Faversham, Viscount Cardwell, Lord Dunsany, Lord Crofton, Lord Skelmersdale, and Lord Emly.

The *Earl of Faversham* asked the Lord President of the Council whether the Cattle Diseases Bill provides for cases in which cattle disease may be detected in animals during transit or on landing, or while exposed in a market; and, if so, in what manner.

The *Duke of Richmond and Gordon* replied that the Bill would give power to the Privy Council to make special regulations in such cases.

At a subsequent meeting the name of the Duke of Northumberland was added to the Committee.

ARMY VETERINARY DEPARTMENT.

HOUSE OF COMMONS.—*March 15th.*

Mr. Hardy informed General Shute that a new warrant with reference to the Veterinary Department of the Army had been prepared, and would, in a few days, be submitted to the Treasury for confirmation.

MISCELLANEA.

THE GOLD SHOE CASE.

AN UNFORTUNATE CAREER.—The career of the lady who shod her horse with gold in Edinburgh a few weeks ago has had a sad ending. Lately she attracted attention by reckless distribution of gold in Spain; last week she was confined in the Gartnavel Lunatic Asylum, Glasgow. She is the daughter of the late George Thomson, surveyor of taxes, Dumfries. Her uncle acquired a considerable fortune in America, and at his death left a large sum to Miss Thomson, who is now about 40 years of age. Her three brothers are now interesting themselves in the safety of the unfortunate lady.—*North British Agriculturist, Feb.* 27.

OBITUARY.

IN the 87th year of his age, Mr. Thomas Stanley, M.R.C.V.S., of Edmonton, Middlesex. His diploma bears date Jan. 21, 1826.

Mr. Alexander Amos, M.R.C.V.S., late Gorebridge, Midlothian. His diploma bears date April 20, 1841.

ERRATA.

In Mr. Moore's observations at the Lancashire Veterinary Medical Association's meeting, page 186, *for* £1500, *read* £15 0*s.* 0*d.*, and *for* £2000, *read* £20 0*s.* 0*d.*

THE

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Communications and Cases.

TOXICOLOGICAL AND OTHER NOTES.

By Charles A. Cameron, M.D., Fellow and Professor of Chemistry and Hygiene, Royal College of Surgeons, Ireland, Medical Officer of Health and Analyst for Dublin.

Poisoning with Croton Oil.

A few months ago, Mr. John S. Clarke, a gentleman residing near Portumna, county of Galway, submitted to me for analysis a horse-ball, one of three which he had purchased in a medical establishment. The others had been given to two young horses, and both had died shortly after. He stated that the horses had been in perfect health previous to the administration of the medicine, but that shortly after taking the balls, their heads "drooped," they refused food and died within eighteen hours. I only saw the stomachs of the animals and these organs were much inflamed.

I examined the ball for the commonly occurring irritant poisons, but failed to detect any. It then occurred to me that croton oil might have been used in preparing the ball, and having treated the small portion of it which remained, I extracted from it an oil which reacted in the same way as croton oil. A drop of it placed upon my skin produced the characteristic pustular eruption caused by croton oil. The quantity of croton oil in the ball was probably less than a drachm. I understand that the compounder subsequently admitted that he had put croton oil in the balls. These

instances are but additional proofs of the uncertain and dangerous results which attend the administration of croton oil to the horse.

Cancerous Warts lining the Pleura and Peritoneum.

About a year ago, Mr. Richard A. Chearnley, D.L., Satterbridge, Cappoquin, Co. Waterford, sent me part of the carcase of a cow to examine. She was an old cow, and though not obviously ill, did not thrive when put into the stall for fattening. I found the costal pleura and the peritoneum studded with excrescences, which varied in size from that of the head of a pin to a hazel nut. They proved to be cancerous warts; I have seen the interior of thousands of oxen, but never met with a case of the kind before. I noticed that the cancerous warts when first cut into, contained numerous bacteriod bodies, smaller than those usually found in putrefying matter. They were very soon succeeded by the ordinary bacteria found in decomposing organic matter.

Disease Caused by Eating Mouldy Cake.

A feeding cake somewhat largely used in Ireland, was lately much complained of by several persons who had previously found it to be an excellent feeding stuff for oxen and sheep.

The Dublin agent for the sale of this food (which is manufactured in London) submitted to me a small sample for analysis; in this I could detect no poisonous matter or acrid seeds. I was informed, however, that many persons had attributed the severe illness and even death of some of their stock to the use of the cake.

The following statement, made by the herd of Lady Margaret Strong, who resides near Dublin, was shown to me:

"Thirty sheep in one field were given 1½ stone of cake on Monday, 1½ stone again on Tuesday, on Wednesday evening all the sheep were noticed to be bad with diarrhœa, no more cake was given, on Thursday morning two were found dead in the field—at 12 o'clock another had its throat cut, just before it was thought to be expiring, and on Friday morning another was found dead from diarrhœa, with watery discharge on opening stomach, undigested food was found and pieces of cake.

"On Sunday a feed of 3 lbs. each of same cake was given to two cows, on Monday they were stopped in their bowels with slight watery discharge, very small bits of cake passing

undigested, no more food was given and they got well, after being treated with salts, ginger, gruel and oil.

"On Sunday morning, 1¼ lb. of cake ground into fine meal was given to a calf 6 months old—she was sick all day on Monday and refused food, got well on Tuesday.

"The milk of the cows went off suddenly after eating the cake."

Having read this statement and listened to some other to the same effect, it occurred to me that the cake might have become mouldy, and I therefore requested the agent to send me a large sample. A bag containing 2 cwt., was accordingly sent and I found about 20 per cent. of it covered (the cake was in small pieces) with blue fungi, exhaling a very disagreeable odour. The temperature of the central portion of the contents of the bag was 108° Fahr.

No doubt the fungoid growths caused the bad effects complained of. I have in several instances been able to connect the illness of animals with the use of mouldy food.

Turkeys and Ducks Killed by Swallowing Mill Dust.

Last Christmas, a shop keeper and farmer, named L. Walsh, residing at Kilbride, Blessington, County of Wicklow, brought me literally a cart load of dead turkeys and ducks. He stated that they belonged to himself and some other persons, and that they had died after feeding for some days on mill dust or sweepings, of which he brought me a specimen.

I found the mill dust to consist of flour, bran, &c., and to contain 8 per cent. of mineral matter, chiefly in the form of very fine siliceous sand. I found the stomachs, hearts, and gizzards of the birds in a normal state; the brains were congested, and there was a considerable amount of enteritis. The lower portion of the digestive canal was closely packed with very hard matter, which on combustion left no less than 41·58 per cent. of mineral matter, in one case and in another, 37·08 per cent. I attribute the death of the birds to the use of the mill dust with its powdered silica. Had the amount of silica been double, but its form different, no doubt no bad effects would have ensued. There were no pebbles in the gizzards.

On several previous occasions persons complained to me that their hens, ducks, &c., had died in consequence, as they asserted, of being fed with sweepings from flour mills.

ANOTHER OUTBREAK OF SPLENIC FEVER AT RIGSBY.

By D. Cresswell, F.R.C.V.S., Louth.

Thinking that a short account of the *third* outbreak of splenic fever which recently occurred on the farmstead of Mr. Mason, of Rigsby, might interest your readers, I herewith enclose the particulars.

On the 1st of April Mr. Mason removed three heifers, each suckling a calf, from his upper crew yard, where the disease had not previously appeared, into the lower one, in which several beasts had died on the first outbreak.

On the following Saturday one of the heifers was observed by the "cartman" to be ailing. After the lapse of a few hours she died. The *post-mortem* appearances proved the cause of her death to have been splenic apoplexy.

The two remaining heifers looked dull and dejected; their temperatures were severally 102·4 and 103·3 F., but their calves appeared to be healthy. They were immediately put on the sulphite treatment, and in a day or two showed evident signs of recovery. On Monday their temperatures had fallen, and on Wednesday as they appeared almost well they were turned out to grass with their calves and have since continued to go on satisfactorily. The crew yard above spoken of, into which the heifers were placed, had been disinfected with chloride of lime and carbolic acid, and all the manure had been removed after the beasts had died in the first outbreak. Had sulphur binoxide in sufficient quantity or chlorine been disengaged in the crew the germs of the disease would in all probability have been early destroyed, and this further outbreak avoided.

The disinfection was wholly inadequate, hence in my opinion the cause of the reappearance of the disease.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 219.)

MYRTALES.—Myrtal Alliance.

These are diagnosed as follows:—*Epigynous Exogens, with polypetalous dichlamydeous flowers, axile placentæ and*

embryo with little or no albumen.—In this alliance is brought together a most difficult series of plants to reduce to any exact system; we therefore copy the following arguments from Lindley, the author of the system, and must beg of the reader to examine some of the examples adduced, as by this means both analogies and differences will be best understood.

"It may at first sight appear paradoxical to bring into close contact orders usually so widely separated as Composites, Fringe Myrtles, and Myrobalans, and it must be confessed that if monopetalous corolla did deserve the value usually assigned to it the measure would be incapable of justification. But if, as it is one of the objects of this book to show, we should neglect that circumstance the relationship of all the plants now mentioned will be less problematical. *It is the capitate inflorescence of Composites that gives them one of their most striking peculiarities;* but that disappears in Valerian-worts, about whose near relations to Composites no one entertains a doubt; *and among the Myrobalans and Fringe Myrtles a tendency to a capitate condition is unusually great,* as for example in Combretum, and Conocarpus in the one, and in four fifths of the species in the other. The relation of Myrobalans to Fringe Myrtles is not likely to be disputed. Now, the inflorescence of many genera differs in no respect from that of Composites, and on the other hand numerous Composites agree entirely with Fringe Myrtles in their glandular leaves. Moreover, the calyx of the latter has often as great a claim to the designation of pappus as that of any Composite whatever. It must be confessed, however, that we have not at present among Composites any such tendency to a separation of the petals as would lead to the expectation of finding a polypetalous genus which would render the assumed connection between Fringe Myrtles and Composites more evident.

"But the example of Phyteuma among Bell-worts leads to the anticipation of such a possibility; or if not the tendency to unite the petals or stamens which is so common in Myrtle-blooms may be expected to result in a monopetalous corolla among the Fringe Myrtles.

"These remarks are not, however, introduced to show that Composites and Myrtles ought to stand in the same alliance; that would certainly be an unnatural association. But they seem to show conclusively that they belong to alliances standing extremely near each other."*

In this alliance are brought together no less than ten

* 'The Vegetable Kingdom,' p. 717.

natural orders, ranging from Myrobalans, through Myrtals, to Lecthys, to which latter we are indebted for the Brazil nuts. We shall not, however, refer at greater length to more than three of these orders, as follows:

"1. HALORAGACEÆ—*Hippurids.*

2. ONOGRACEÆ—*Onograds.*

3. MYRTACEÆ—*Myrtle-blooms.*

"1. *Haloragaceæ.* Is a natural order remarkable for inconspicuous and mostly incomplete flowers and more or less whorled leaves. It is well represented by two native general namely, (*a*) Hippuris; (*b*) Myriophyllum. The whole order contains somewhere about ten genera and eighty species.

a. Hippuris—Mare's-tail. Is a curious aquatic plant, externally not unlike the Equisetum, though differing greatly in structure, as the latter is a non-flowering plant, while the simple flower of the Hippuris is without floral envelopes, but it contains a single stamen and a single pistil, the essential parts of flowers which places them in the small Linnean class of Monandria.

"*b. Myriophyllum*—Water Millefoil. Is also an aquatic genus, remarkable for the finely pectinated whorled leaves which are found in the three reputed species. Lindley remarks upon "the curious arrangement of necklace-shaped cellular tissue which radiates from the centre, leaving large air-cavities between its rows. In the centre is a cylinder of very fine woody tubes, which enclose a confused mass of cellular tissue and spiral vessels. It was probably this which led Professor Link to regard Hippurids as Endogens."*

These plants, though interesting to the botanist, have no remarkable properties; the Trapa has edible kernels, and it is reported that the ancient Thracians formerly partially subsisted on a species of these as do the people of Cashmere at the present time.

2.—ONOGRACEÆ.—Onograds have for the most part highly conspicuous flowers. They are well represented by the native species of (*a*) Circæa, (*b*) Epilobium, (*c*) Œnothera, and that favourite of the conservatory from the open gardens, the Fuchsia, the common border Clarkias.

a. The *Circæa*, or Enchanter's Nightshade, is common to shady places; it seems especially so under walls and about thickets near dwellings. Mrs. Lankester tells us that "this genus of plants is named after the famous enchantress of ancient mythology, Circe, who bewitched the companions of Ulysses. The fruit, being covered with hooked prickles, lays hold of the clothes of passers by, as it is fabled Circe did

* 'The Vegetable Kingdom, p. 723.

with her enchantments.* However that may be, no enchantments are worked now by this plant, nor are we aware of its employment as a "herb of grace" by the country culler of simples.

b. Epilobium.—Of this genus we have as many as ten native species. Some of these are found in water or by the water-side, while others prefer more or less damp situations. The *E. angustifolium* now occurs very abundantly in woods and copses, especially on limestone formations. Within the last few years it has increased wonderfully in the Cotteswold district, doubtless carried about with the pappiform or rather papillose seeds. This affords an example of how quickly an introduced plant may take possession of a district. As common as is this species at the present time, there is reason to think that it is after all a Continental interloper, and the country name of "French willow herb" is indicative of its exotic origin, as though it was probably introduced from the east, yet at one time whatever was different from that of our own country was attributed to France.

The common water species, *E. hirsutum,* commonly called codlins and cream, seems to have got its name from a peculiar fragrance of roasted apples which is sometimes emitted by the fresh flowers.

These and their congener the Œnothera are handsome plants, the latter being a primrose yellow, while all the former are more or less of a rose tint. The whole order is comparatively useless. We have been told that the roots of the *Œ. biennis*are edible, but we have not had any experience upon the subject.

The *Fuschia* is among the most attractive plants of this beautiful order. As we have it in cultivation, it is found to produce as endless varieties in its showy costume as can be presented in our parks and gardens during a London season. The differences observable in the length and proportion of the parts of the flower, now as slim as a modern buding Miss, anon swelling out according to a bygone fashion, which got for it the name of *la crinoline.* Again the calyx of its tube and corolla are ever varying in colour, so that the greatest variety has been arrived at out of most simple elements. The fruits of some species are said to be edible, but in as far as our experience goes we have never found any of them to be anything like pleasant, albeit the shrubs are ever pleasant to look upon, and the species which adorn the hedges in the Isle of Wight and other southern stations of our island have always a charm for the visitor.

* Sowerby's 'English Botany,' vol. iv, p. 28.

3. *The Myrtaceæ.*—Myrtle-blooms are well characterised by the myrtle of our houses. These have a foliage dotted with transparent discs of a more or less pellucid essential oil, by which so many of the order are possessed. Hence the order is renowned for active medicinal or spicy agents. Some, as the *Punica granatum*, the pomegranate, are renowned for the astringent nature of the fruit.

Indeed, from the aromatic clove to the stimulating *Melaluca Cajeputi*, whence come the Cajeput oil so celebrated as a rubifacient in rheumatic affections, all are active medicines.

The order contains some forty-five genera, with as many as 1300 species, few of which but possesses some agreeable or active principle; all are highly ornamental. Many of them are common to our greenhouses and gardens, but they are all of foreign extraction, as we are not aware of a single native illustration of the order. They are indeed mostly natives of hot climates, the warm atmosphere of the tropics being required for the perfecting of their highly aromatic juices.

"A REMINISCENCE OF DUTIES IN THE COUNCIL."

By Thomas Greaves, F.R.C.V.S., Manchester.

It has often occurred to me when reading the criticisms of some of the writers in the pages of the *Veterinarian* and the *Veterinary Journal* that it would be in some degree a satisfaction to them, and perhaps to other members of the profession, if some member of Council would give them a fuller account of the doings of the Council than is vouchsafed to them through the usual channels. It is not my intention to exceed the legitimate bounds of privilege, but as I have been a member of Council nearly twenty years, and am a tolerably regular attendant at the meetings, I can say it to the honour of that body that each member is sincerely actuated by one leading idea—viz. to exercise his best ability for the good of his profession. It is true that many men have many minds, possess different talents and aptitudes for business, also different degrees of intelligence; thus we have in the Council gentlemen of education and refinement, possessed of natural shrewdness, some of large practical experience, some of a theoretical and others of a business turn of mind, but each and all take a deep interest in our common profession, and

use all their powers to raise its character and its efficiency. Our chief and ostensible duties are to appoint examiners and to grant diplomas, also to keep a constant and careful supervision over the interests of the profession, but besides these there are numerous matters being constantly brought up before Council for careful consideration which the outside members never hear of.

Some of my professional brethren are inspired with a laudable ambition, and consider it a high honour to be members of Council; others may look upon it as an inconvenience and a trouble to leave the ordinary routine of business to attend its meetings. Members living 50, 100, or 200 miles away from the Royal College of Veterinary Surgeons have to make up their minds to submit to the call upon their time and purse; it will require a whole day to attend each meeting five to eight times a year; the mind is kept up to its highest tension for three or four hours at the meeting, and then one has to return home at nine o'clock or twelve o'clock at night and to travel until three or six o'clock the following morning. This time taken when one is busy and has many serious cases on hand is ill-spared, and is attended with more or less inconvenience. At times of excitement when matters of great importance are on the tapis in the Council, it is necessary to attend ten or fifteen times in the year, beside the committee meetings at which it would surprise any non-members of Council to see the work that has to be done.

I well remember when we applied to Parliament for a Veterinary Medical Bill, and gave our reasons for the application (see page 527 for 1866), and when the two applications made to the Government for a Veterinary Charter for Scotland—the one in 1867-8, the other in 1876-7—that we had many special meetings in addition to the quarterly meetings; for we found that all the influence and importance that could possibly be brought to bear upon the matter was so brought by all the magnates of Scotland—viz. the noblemen in Scotland, the Highland and Agricultural Society of Scotland, together with the Lord Provosts of Edinburgh and Glasgow, and members of the Corporation of Edinburgh. The deputation who presented the petitions was in each case a very powerful body indeed; they urged their claims with all the force and persistence that they were capable of. The Lord President of the Privy Council, His Grace the Duke of Richmond and Gordon, to whom the matter was referred, and who it must not be forgotten was also chairman of the Highland and Agricultural Society of Scotland, took time to consider the application in

both cases; we all felt that our position was in great peril, that a dangerous crisis existed. They were indeed very anxious times for your Council, every cloud in the horizon seemed black and fit to burst, but even at the worst our hearts did not sink within us, we knew our cause was just; we had on this last occasion a gentleman—Sir F. Fitzwygram—at the helm, in whom we had implicit confidence; his value and use to us and to the profession at that moment was simply inestimable. The matter was referred by the Council of the Royal College of Veterinary Surgeons to a Committee to take what measures they considered best under these urgent circumstances. On both occasions we formed deputations to wait upon the Lord President of the Council. I had the honour to form one of the first deputation, and urged our reasons against the granting of a Scotch charter. The last Committee was composed of the President, Sir Frederick Fitzwygram, Mr. Collins, Mr. Harpley, Mr. Fleming, Mr. Field, and myself. We met at the Royal College of Veterinary Surgeons on the day after one of the council meetings; we were engaged for three and a half hours. Sir Frederick and Mr. Harpley being governors, and having to attend a meeting of the governors of the chartered Royal Veterinary College at Camden Town, we adjourned for two hours, then we met again for another two hours. During the whole of these five and a half hours we were most earnestly and intently occupied with the consideration of the question—viz. the best course to pursue to obviate the attainment of what we considered must prove to be a great calamity to the well-being of our profession; we interchanged and discussed each other's ideas freely, frankly, and untiringly. Some of my suggestions were approved and adopted; some of Mr. Fleming's were adopted, but the bulk of the reasons (see page 127 in the *Veterinarian* for 1876) against the granting of a separate charter for Scotland emanated from the clear heads of Sir Frederick and Mr. Harpley. I freely accord to them the honour of manipulating the chief of those reasons, reasons which were so clear and so forcible that no sooner had they been perused by his Grace the Duke of Richmond and Gordon than he at once decided to refuse to grant the prayer of the petition for a veterinary charter for Scotland. I feel no hesitation whatever in saying that all the credit and honour is due to Sir Frederick for this successful result, he having brought to bear upon the question his great mind and lucid thought, his tact and his influence. The attention and time he gave to this matter was great and unsparing; the dozens of times

he had to call upon our solicitor, the Parliamentary agent, and the Government offices, &c. &c. And yet there are those in the profession so full of a carping and contentious spirit that they can see only faults where they ought to bestow applause. Even "the new charter," the preliminary examination, the extended curriculum of study, the practical examination, the fellowship degree, the voting papers for members of Council, the holding of the annual meeting in Edinburgh are all matters of questionable utility in their eyes, although they believe that London is no longer the only place to hold the annual meeting. Some of my professional brethren say a member of Council should be a superior man—a man of a refined and cultured mind, a gentleman possessing a classical education and scientific attainments; but I say he ought to possess other qualifications also; he should give proof that he has the well-being of the profession at heart, and that he takes a deep interest in everything that appertains to the real advancement of the profession. He should possess, not only ability and intelligence, but also be a man of close observation and clear discernment, having large and long experience in the profession; a man of position and character, and who understands fully the kind of education that will fit the young man best for the performance of the various duties of his profession.

We have *no partiality between the two countries*, not the least do we desire to detract in the slightest degree from the position and character of those who have matriculated at the Edinburgh Veterinary College, but would much rather freely admit that many of those of our professional brethren, such as Fitzwygram, Collins, Williams, M'Call, Gamgee, Fleming, Lawson, Cartledge, Robertson, and Robinson, and others whom we could name who have joined the corporate body, are amongst the very best men in our profession, and we hesitate not to say that some of them are not, and others that we could name would be if elected an honour to the Council, and even to the presidential chair. We have always admitted this. We are now and always have been most anxious and solicitous that they all, without a single exception, should partake and possess the same advantages and privileges as ourselves. *We wish to give them a fair chance to take their proper place amongst us.* They would be heartily welcomed. We have offered the gentlemen who hold the Highland and Agricultural Society certificate only every chance to obtain our diploma; we see their own friends freely and frankly admitting that their certificate is not a legal diploma; and even when they showed no inclination to enter the corporate body

we offered them inducement after inducement in the way of granting to them the diploma on only a formal or practical examination. We admit fully, and take it for granted, that these gentlemen have studied the same subjects and have been as well taught as ourselves; we are most anxious that they should possess a legal status and a legal standing. We have given every member of the Royal College of Veterinary Surgeons in Scotland a vote for members of Council without having to come to London to record it. I feel it is a pity that the holders of the Highland certificate do not join us, if only to put themselves in possession of a vote. We have inserted a clause in our last charter to hold the annual meeting of the profession once in every third year; the Council were very anxious that it should be held in Edinburgh this May. No one was more anxious, or who fought more stoutly for it, than our noble and worthy President.

CASE OF FRACTURED JAW OF A HORSE.

By J. P. Heath, M.R.C.V.S., Exeter.

In May last I was called to see a horse, the property of Mr. Gale, of Exminster, Devon, which had been kicked by another horse on the jaw whilst at work. On examination I found a transverse fracture on the left side between the first and second molar teeth of the lower jaw, with lesion of the buccal membrane and the bone protruding inwards, the tongue was hanging out of the mouth and a constant flow of saliva existed. The animal's appetite was good, but there was of course a total inability to masticate. On inquiry I found the age of the horse to be seventeen years; but he looked well and was in first-rate condition, and as the farmer could ill afford the loss I agreed to try what could be done towards a cure. For this purpose I sent for some pitch, and when melted I procured a wedge-shaped piece of wood about six or seven inches long by half an inch thick, which after fitting it between the branches of the lower jaw, I well besmeared with warm pitch and pressed it tightly between the fractured end of the bone. I then fixed another piece of thin wood besmeared with pitch, and about the same length and two inches wide, outside the fracture, placing a bandage six inches wide over the whole, and tying it around the face below the eyes. The horse for the first fortnight I do not think took more than a gallon of the thin mashes and gruel with which he was

supplied from a bucket deep enough to allow him to push his head down as far as his eyes; but after that time the use of the muscles of the tongue began to return although slowly, and he was enabled to swallow a little. In about three weeks he could lick up oatmeal and oil-cake gruel made thick, and in less than a month I removed the bandage (although the splints remained for six weeks), as by this time he could swallow a little pulped mangold and grass cut into chaff. For nine weeks he could only feed on cut fodder; but after that time he was turned out to grass to shift for himself and soon regained the condition from which he had been so sadly reduced by his long abstinence. At the present time he is as well as possible and in regular and constant work. The first and second molar teeth, which were loosened, appear now to be as firmly fixed as the others. He feeds on the ordinary diet of the other horses.

CASE OF RABIES IN A HORSE.

By the Same.

About a fortnight since I was fetched by a cab proprietor to see a horse which he said could not feed properly. I at once observed that the floor of the stable was covered to a great extent with frothy saliva, which was flowing from the animal's mouth. I tried if he could drink, and although he was able to do so slowly the effort was accompanied by a peculiar spasm which somewhat resembled the spasms seen in horses when choked. Not suspecting rabies, I sent for a balling iron and searched the mouth and pharynx, but finding nothing there I tried a little bran and oats as a feed, which, however, he was only able to take very sparingly. With much difficulty I administered a mild purgative and sedative draught. This was about 8 o'clock at night, and on the next morning I found the symptoms had slightly abated and that the animal had eaten a small quantity of food. I saw the horse drink two or three quarts of chilled water, which was accompanied with a spasmodic effort, besides which he exhibited indications of vice.

The following day, only thirty-six hours after I first saw the horse, the owner went up to him as usual, when he rushed at him open mouthed and bit him on the forehead. On my arrival I at once saw that the horse was rabid. He bit at his fore legs in a savage manner, rushed at me and the men, with his mouth wide open, and drove us all

out of the stbale. I went to procure a gun to shoot the brute, but was detained about an hour and a half, and on my return he was in fearful convulsions and just breathing his last. I was not able to find out when he was bitten, but that he was so appeared to me a certainty. I remarked with regard to water that there was no *dread* of it, but a peculiar spasm whilst taking it and a great difficulty in swallowing it.

SEROUS ABSCESS IN THE RIGHT HIND QUARTER OF A MARE.

By R. H. Dyer, M.R.C.V.S., Limerick.

It may not be uninteresting if I describe a case which was brought under my notice some time since, of a singular instance of double abscess found on the right hind quarter of a well-bred, fast-trotting mare, the cause of which was unknown. The particulars related to me by its owner were as follows:—Some months ago a swelling was discovered by the farrier, who was in the habit of shoeing the horses belonging to the proprietors of the stud, and who also treated them medically in all ordinary cases of disease. The farrier had more than once evacuated the contents of the sac, and had inserted a seton, with a view of bringing the case to a successful termination, but all his efforts were fruitless.

At length it was determined to seek further advice, and I was consulted. Upon examination of the part it was believed that an enormous quantity of fluid existed in the sac. The mare was fortunately cast for an operation, which appeared from the history of the case to be necessary. The sac was opened, and upon this occasion, as upon previous ones described, about a pint of fluid escaped. Finding that the swelling was but little diminished in size, I naturally concluded that a second and deeper-seated abscess existed. On cutting through the muscles I found an immense quantity of fluid was present. A gallon measure was filled, and I should consider that a similar quantity was lost.

The cyst containing this fluid was coated with loose lymph, the whole of which was removed. The subsequent treatment adopted was merely an injection of a weak solution of hyd. bichlor. which, in the course of three weeks, affected a perfect restoration of health to the part. The mare was sent home, and has continued in work ever after.

CYST IN THE NECK OF A YEARLING BULL.

By the Same.

I was consulted with reference to a swelling which was situated upon the neck of a yearling bull, which the owner was anxious to breed from. I was informed that for some months a large swelling had been observed upon the neck, about midway between the head and chest. On manipulating the part it had the appearance of being a tumour. After determining the mode of operation I found that, whatever it was, it was situated under the muscles of the neck. Having cut through about two inches of muscular fibre I found that a cyst was present, which contained a large quantity of semi-solid matter, resembling mortar as prepared for dashing walls. Great care was taken to remove the contents of the cyst, and destroying the secreting membrane.

The part was well cleansed by means of water and the same appliances made use of as described in the foregoing case. In the course of two or three weeks the animal was sent home completely restored to health, and no return of the disease ever manifested itself. This animal, the same as the first named, had had the attention of what is described as a "knowledgeable man."

ABSCESS OF THE MAMMARY GLAND OF A COW, CAUSED BY AN EMBEDDED NEEDLE.

By Thomas H. Prior, Parsonstown.

The following rather interesting case recently came under my notice. A gentleman living near this town has a very fine milch cow, six years old, which, some short time since, the dairymaid while milking one evening noticed, flinched very much and experienced great pain and uneasiness during the manipulation of the udder, particularly at one part, close to a teat. On the next morning the dairymaid noticed what she described as a pimple to be existing at the site of the tenderness, to relieve which hot fomentations were applied. After three or four days an abscess formed and broke, giving exit to the remains of a packing-needle which was originally about four inches in length and of relative size. Its length was only slightly altered, but its size was much

diminished, being not more than a fourth part of what it was at first. It presented a corroded and worn condition, as if it had been acted on with acids.

Query—How did the needle get to the mammary glands?

[The eroded condition of the needle would lead to the conclusion that originally it had entered the *rumen* with the food—such things being common in the ox tribe—and that having penetrated the walls of the viscus it had been moved from place to place until it became fixed in the mammary gland. Foreign substances, especially metallic ones, not unfrequently pass through the walls of the *reticulum*, and when so doing usually find their way direct to the heart, and give rise to obscure cardiac disease which invariably terminates fatally.—EDS.]

Pathological Contributions.

DISEASES AMONG ANIMALS IN PRUSSIA.

THE report of the Royal Prussian Committee on veterinary affairs relating to contagious diseases among animals in Prussia has been issued. It appears that from April 1867 to March 1877 anthrax has decreased where drainage has been introduced; but that no less than 547 cases of foot-and-mouth had occurred in the Rhine Province, Silesia, and Brandenburg. Large sums had been paid as compensation on account of the compulsory destruction of cattle affecte d with pleuro-pneumonia and of horses suffering from glanders. Prussia lost by the outbreak of rinderpest at Klutschau in January, 1877, 910 beasts, 335 sheep, and 4 goats, nearly all of which were compulsorily slaughtered.—*The Live Stock Journal.*

DEATH OF CATTLE FROM SPLENIC APOPLEXY

MR. LEATHS, farmer, residing at Lamplough Hall, Cumberland, has suffered a severe loss through the death of several cattle. Noticing a falling off in the condition of his stock, he commenced to give them rough cotton cake, Indian meal, and locust beans. The man in charge gave twice as much as an ordinary feed to them. One cow died suddenly, and another, which was strangely attacked, was slaughtered. The next day a bull died, and the following day two more died. An examination revealed that death resulted from splenic apoplexy.—*Live Stock Journal.*

CATTLE PLAGUE.

The latest report from St. Petersburg announces that cattle plague exists in the following governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, Bessarabia, Warsaw, Bothynin, Podolia, Kherson, Ekaterinoolav, Plotz, and Taured.

The *Morning Advertiser* of 13th April states that cattle plague had broken out at Gostynin, in Russia Poland.

The latest report from Czernowitz states that in the government of Bukowina cattle plague now only exists in the village of Waszkontz in the district of Wignitz, the disease having ceased during the second half of March in the village of Waslontz, in the district of Czernowitz.

A report from Scutari, dated 30th March, states that the cattle plague is said to exist in the adjoining districts of Goussenie and Prisrend; and that the authorities have given orders that no cattle from those localities are to be allowed to be brought to the markets of Podgoritza and Scutari.

A communication from Constantinople states that the cattle plague has broken out in that neighbourhood and in the farms round Alem Dagh, on the Asiatic side of the Bosphorus.

A despatch from Salonica, dated 2nd April, reports that the mortality among the horned cattle in the Pashalik of Salonica is still very great in spite of the preventive measures that are taken.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of March, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise:—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals.						Healthy Animals.*					
			Number of Diseased Animals.					Disposal.	Number of Healthy Animals brought in the same Vessels with Diseased Animals.					Disposal.
			Cattle.	Sheep.	Goats.	Swine.	Total.		Cattle.	Sheep.	Goats.	Swine.	Total.	
Antwerp . .	London . . .	Foot-and-Mouth	...	3	...	...	3	Slaughtered under the instructions of the Privy Council.	...	540	...	...	540	Slaughtered under the instructions of the Privy Council.
„ . .	„ . . .	Sheep-scab . .	...	8	...	...	8	Ditto	...	266	...	...	266	Ditto
Bremen . . .	„ . .	„	...	182	...	...	182	Ditto	...	7934	...	...	7934	Ditto
Hamburg . .	„ . . .	Foot-and-Mouth	...	4	...	...	4	Ditto	...	797	...	...	797	Ditto
Total Diseased Animals .		Foot-and-mouth	...	7	...	...	7	Total Healthy Animals .	...	9537	...	...	9537	
		Sheep-scab . .	...	190	...	...	190							
		Total . .	...	197	...	...	197							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of March, 1878.

Veterinary Department, Privy Council Office,
April 8th, 1878.

PLEURO-PNEUMONIA.

In the Netherlands, from 24th of February to 23rd of March, the following cases of pleuro-pneumonia have been registered:—

In South Holland	61 cases
In Utrecht	1 „
In Friesland	2 „
Total	64

Reports of the existence of pleuro-pneumonia have been received during March from the following counties in Great Britain:—

Chester, Cumberland, Derby, Durham, Essex, Herts, Hunts, Kent, Lancaster, Leicester, Lincoln (*Kesteven* and *Lindsey*), Middlesex, Norfolk, Northampton, Northumberland, Salop, Somerset, Stafford, Suffolk, Sussex, Worcester, York (East Riding, North Riding, and West Riding), Isle of Ely, the Metropolis, Aberdeen, Banff, Edinburgh, Fife, Forfar, Haddington, Kincardine, Lanark, Perth, Renfrew, Roxburgh, Stirling.

FOOT-AND-MOUTH DISEASE.

Reports of the existence of foot-and-mouth disease have been received during March from the following counties:

Berks, Cambridge, Hants, Hereford, Herts, Lancaster, Norfolk, Northampton, Northumberland, Sussex, Warwick, Wilts, and York, West Riding.

Facts and Observations.

The Export of Canadian Cattle (Ottawa, April 19).—The Minister of Agriculture has announced that the Government will use all the means in their power to prevent the exportation of cattle to Great Britain unless a thorough inspection has been previously made. The beasts will be inspected at Quebec in the summer, and at Halifax in the winter.

New Dairy Company.—The Glasgow Dairy Company, Limited, with a capital of £30,000 in 6000 shares of £5 each, is being formed for the purpose of supplying pure milk under strict sanitary regulations.

Action of very Low Temperature on Bacteria.—While the action of high temperature on bacteria has been frequently studied, few observations have been made as to their behaviour at low temperatures, but it has been found that they stiffen at 0° (C.), and are not killed at — 18° to — 25° (C.). Herr A. Frisch by means of solid carbonic acid and ether exposed some putrefactive fluid bacteria and some forms of coccus and bacterium in the morbid products of living organisms to — 87·5°, and allowed them in the course of 2½ hours to rise to 0°. The result was that the bacteria in the fluid withstood this low temperature, and was able to grow rapidly when transferred to a suitable nutritive fluid. Further information is to be given concerning the resisting power of Coccus, Bacterium, and Bacillus.

Mustard.—Mr. H. G. Glasspoole has published, in *Science Gossip*, an article on Mustard, which is both of antiquarian and pharmaceutical interest. The plant was believed to have been introduced from Egypt. It was mentioned by Pythagoras, and was employed in medicine by Hippocrates B.C. 480; it has, moreover, been described by Pliny. The writer of the article imagines that the mustard-seed mentioned in Scripture was not a different plant from the one with which we are familiar, but was in reality the *Sinapis nigra*, which is indigenous to Palestine as it is to Britain. Dr. Thompson, in his 'Land and the Book,' states that he has seen this plant as tall as the horse and his rider in the plains of Acre. The story of the introduction of Durham mustard will probably be acceptable. Mustard used formerly to be largely cultivated in that county, but until the year 1720 it was pounded in a mortar, coarsely prepared, and sold in that rough condition. An old woman, of the name of Clements, resident at Durham, conceived the idea of grinding the seed in a mill and passing the meal through the several processes which are resorted to in making flour from wheat. A perfectly sharp and most scientific old lady. For many years she kept the secret to herself, and had the exclusive supply of the article in the principal parts of the kingdom, and particularly in London. George the First became a purchaser and helped to give the condiment a reputation. Twice a year Mrs. Clements used to travel up to town for orders, and was thus able to accumulate a small fortune.

THE VETERINARIAN, MAY 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

VETERINARY INSPECTORS AND THE HIGHLAND AND AGRICULTURAL SOCIETY'S CERTIFICATE.

AT the last meeting of Council the subject of the provision of the Contagious Diseases (Animals) Bill now before Parliament was under discussion chiefly in relation to the use of the term "veterinary" with "inspector." Our readers will remember that the Bill provides for the appointment by the local authority of at least one *veterinary inspector* in each district.

Of "inspectors" without the "veterinary," the local authority may appoint as many as may be necessary, and the "inspectors" may be persons who possess or who do not possess special qualifications; probably they will consist chiefly as they do now of the members of the police force, but it is important to note that there is no restriction affecting the appointment of "inspectors," who nevertheless have large powers entrusted to them—including power of entering suspected premises and places, and power to apprehend offending persons.

Veterinary inspectors have additional powers relating to the issuing of certificates of health and disease, and in Ireland all the powers of a "veterinary inspector" may be exercised by an "inspector." This does not mean, we take it, that the Irish Executive cannot appoint a veterinary inspector, but that having no member of the Royal College of Veterinary Surgeons in a district, the authorities may appoint a person who is not a member of the Royal College Veterinary Surgeons as inspector, and he will have all the powers which in Great Britain are only vested in the veterinary inspector. The important difference is, however, that he will be called inspector and not veterinary inspector, in fact, he will be called what he *is* and not what he is *not*.

As the Bill now stands, the word "veterinary" as used

with inspector means—a member of the Royal College of Veterinary Surgeons, who, as the original charter states, are to be "solely and exclusively of all other persons distinguished by the name or title of veterinary surgeons."

The Scotch authorities demand that the term veterinary shall be extended to mean a holder of the Highland and Agricultural Society's Certificate, on the plea that those who have this instrument have been students at a veterinary college recognised by the Charter, and have passed an examination equal in severity to that which is held by the Royal College. In answer to which it is quite consistently urged that the students might have passed the college examination at first if they had chosen, and that opportunities have since been afforded for entering the body corporate, of which they might have availed themselves, but if from any circumstance they fail to acquire a legal right to the use of the title veterinary, they must be content to be known by some other designation.

We repeat what we have more than once said in effect, that we institute no comparison between the members of the College and the holders of the Society's Certificate as to their social status, scientific knowledge, or practical experience; we simply content ourselves with the remark that the title "veterinary" can only be legally used by members of the body corporate, and we urge upon members of the profession to bestir themselves in order that this small privilege may not be lost.

Extracts from British and Foreign Journals

ON THE DETECTION OF TOXIC MATTER CONNECTED WITH TYPHOID AND OTHER ENTERIC DISEASES.

At a late meeting of the Royal Microscopical Society a paper by Dr. Bartlett, "On the Detection of Toxic Matter connected with Typhoid and other Enteric Diseases," was read by the Secretary, and the thanks of the meeting were unanimously voted to the author for his communication.

Dr. Bartlett, in reply to a question from Mr. Slack, said

that the "fungus" formed in the first instance was merely an ordinary sac or cell, after a short time it became elongated and threw off a filamentous material (like that shown by some of the bacteria) with a number of spores, and it seemed to him to be a sort of connecting link between vegetable growth and that of animal matter. It was not easy to give a very satisfactory idea of them by describing them only, but he hoped shortly to be able to show some very elaborate drawings which would render the subject much more clearly than any verbal description. He believed that Dr. Klein was the first to discover these bodies in the typhoid patient. Whatever it might be, it seemed of precisely the same nature as that which was found in cheese when it was throwing off the butyric ferment. That which he found in the water went through precisely the same stages (and was, perhaps, better identified in so doing) as that found in the cases of typhoid. He had also examined many specimens since, and had been able to identify them so clearly that he was more than ever confident that the two things were identical, and *sarcina* was so well maked that no one would be able to mistake it when seen of a smaller size. The chief difficulty in observing the objects arose from their diaphanous nature, which prevented them from being easily seen, and this led to the suggestion of injecting the organisms with something which would kill, and at the same time would colour them, and this was readily done by a small portion of the mercuric iodide. The point of course was that by adopting this means it had been possible to detect what had entirely escaped the chemical tests which were applied.

Mr. Charles Stewart said that if he had rightly understood the paper, it endeavoured to show that a special fungus found in typhoid patients was due to certain spores found in the water with which the milk cans had been cleansed. He thought, however, that it was hardly possible to say precisely that the fungus in question was the actual cause of the disease, unless it were practically tested whether the introduction of it into the human system was sufficient to produce the disease. These minute fungi were so abundant everywhere, that the mere presence of them where they were found did not of necessity show them to be the cause of the disease, but only perhaps that they had there found a suitable material in which to propagate themselves. Allusion had been made to Dr. Klein's discovery of these fungi, but he believed that although Dr. Klein had thought at one time that he had so discovered them, he had since seen reasons for modifying his opinion, and now was under the

impression that the peculiar fine fibrillæ which he had observed were those of fibrine separated from the general structure, and were, in fact, not fungi at all. Dr. Klein, therefore, had given up this particular fungus, but whilst doing so he did not by any means give up the idea that the disease was due to a fungus, and although he had not yet demonstrated its presence in the human subject, he believed that he had shown it in the pig.

Dr. Bartlett said he had not in any way attempted to do more than identify the existence of the fungus in the water, and afterwards in the patients.

The Chairman inquired if the people at the farms had suffered in any way from drinking the milk, or whether they had been in the habit of drinking the water.

Dr. Bartlett said that there had been no appearance of the disease at the farms, and there was no need for them to drink the water from the pond, because they had an abundant supply of remarkably pure water obtained from the deep chalk. The water from the pond had only been used to wash out some of the cans, and for the probable reason that it was less trouble to use it than to draw up the well water for the purpose.

Mr. Slack said that this Crenothix bore a great resemblance to a minute form of bacterium found in the blood of cattle attacked by a splenic disease which the French called *sang de rate;* and with reference to this it had been shown that if any of the blood from an animal so affected was injected into the circulation of a healthy animal, it was the means of reproducing the disease. With regard to Mr. Stewart considering all these things as fungi, he was inclined to think that this was a very difficult thing to decide; for instance, they would find in mother of vinegar a great many bodies which could hardly be classed as fungi.

Dr. Bartlett thought that it was evident that the very minute red bodies which were found there were real parasites on the yeast plant.

Mr. Slack said he did not refer to these red bodies, but to those producing or connected with acetous fermentation.

Dr. Bartlett said it was on account of the growth of these parasites that brewers found it necessary to change their yeast every year or two, otherwise there was danger of getting, in place of a fermentation, merely certain putrefactive changes.

Dr. Matthews asked was there any suspicion of any sewage having found its way into the water in any way?

Dr. Bartlett said that no trace of any sewage was found.

Dr. Matthews thought that if the disease had really been so traced to its orign, and had been shown to thus originate *de novo*, it was of extreme interest, because it had always been thought to be perpetuated and transmitted down through countless generations and to be traceable to contamination with the matter so transmitted.

THE AMERICAN CATTLE TRADE.

By Professor H. E. Alvord, of Easthampton, Massachusetts.

(*Continued from p.* 248.)

The only expense of wintering in the great Plains region is a general supervision of the herds, the attention on the part of the herders being necessarily closer the farther north the cattle are kept. Above the 40th parallel careful selection has to be made of suitable spots for wintering; but even in that latitude, west of the Missouri river, the dried grasses of the valleys supply the winter forage without labour or expense.

For the final fitting of cattle for the shambles, viz. for fattening, maize or Indian corn is chiefly relied upon, and the great corn-producing States are Ohio, Indiana, Illinois, Iowa, Missouri, and Kentucky, the last year's crop of the six being over 800 millions of bushels. This, therefore, is naturally the great fattening region of the United States, for both beef and pork. It is manifestly better for the farmers to turn their surplus corn into the more condensed value and bulk of meat at home than to sell the grain there, or ship it eastward. The expense of sending a car-load of cattle from the Mississippi Valley to the Atlantic coast is just about the same as for an equal weight of corn. But beef-cattle when they reach New York are worth 28*s.* per cental (gross), while 100 lbs. of corn will sell for only 6*s.*

Yet these variations of climate, production of forage, &c., do not affect the distribution of neat cattle in the States as much as might be expected. The ratio of such animals to every 100 inhabitants, for example, is as follows: In New England, from 14 in Massachusetts, to 96 in Vermont (average 47); Pennsylvania, New York, Kentucky, Ohio, Georgia, and Missouri, from 38 to 66; in California, Oregon, and Texas, 109, 132, and 426, respectively. Ten States have over one million cattle each (three of them over two millions), and ten others over half a million; and these States are situated from the Atlantic to the Pacific, and from the Lakes to the Gulf. In the older States, however, the proportion of milch-cows to

oxen and other cattle is very much greater than in the West, showing the predominance of the dairy interest over beef production. Thus, New York ranks first in the number of milch-cows (1,350,000), but tenth in other cattle (700,000), the dairy products exceeding the meat-products in value as 3 to 1; Texas on the contrary, ranks first in number of "other cattle" (3,400,000) and sixth in milch-cows (500,000), and its dairy products are not more than one sixtieth part of those of New York. In Pennsylvania and Ohio the numbers of milch-cows and other cattle are nearly equal.

In all parts of the country will be found farmers who raise more or less beef for market, keeping the animals on their own premises from birth till they leave the stall. But this is not the rule in beef production. In three distinct regions, the conditions to which the farmer is subjected differ essentially. In the Eastern States, especially, and largely in the Middle States, the farmers not only depend upon the grain fields of the West for their corn and "shorts," but find it cheaper to buy their cattle ready-made, at two or three years old, from the more favoured grazing regions, than to raise them at home. This is so generally the case, that calves in these districts are often a drug in the market. Many are knocked on the head immediately after birth, and thousands hurried into veal by all sorts of unnatural processes, to save the milk and cream, which is more valuable than the calf. I have three instances fresh in mind illustrating this fact: one calf was killed and buried immediately after birth; another, of good size and condition to fatten for veal, was sold for its hide for 1*s.* 8*d.* when two days old; and the third, being from an extra butter cow by a thoroughbred sire, the owner disliked to kill it, but sought in vain for a week to give it away, among the farmers of the neighbourhood. The first and last were males, the other a heifer. These are not exceptional cases—in the dairy districts the people cannot afford to raise their calves even till fit for merchantable veal. But with cattle and grain, both brought from the West, the profit of stall-feeding in this eastern section is very questionable. The main objects with most farmers are, a home consumption of their hay, and a home production of a good supply of barn-yard manure. If the manure alone can be gained, the farmer is usually satisfied; but in many cases, of late years, such operations have resulted in manure made at a cost exceeding its value.

In the Central region, among the great corn-fields between the Alleghany Mountains and the Missouri river, grain-food is so cheap and so much exceeds the home demand, that the

rule is to raise all increase of the live stock, and buy largely besides, for fattening, from the fine pastures of the Sonth and West. The profits resulting are manifest from the fact that there is a steady demand at all the chief cattle markets of this region, especially Chicago, for "Stockers," or thrifty animals from two and a half to four years old, in poor flesh, weighing from 600 to 1000 lbs. These are taken into the country, even as far as 150 miles from the place of purchase, and prepared for beef Steers thus treated often gain 250 lbs. in a season on grass alone, affording a profit of £3, and then 200 lbs. more are added by corn-feeding, further increasing the value of the animal by £2 to £2 10*s*. The prairie farmers who buy 900-lb. steers at Chicago for £6 8*s*. to £8, sell them there again at £12 to £13 within a year, are generally ready to repeat the operation. The circumstances attending such transactions vary so much, in the nature of the cattle, the prices of grain, freights, and economy of management, that the exact profits cannot be fixed or averaged, but it may be assumed that these operations are decidedly remunerative. Indeed, enough is known from repeated (though disconnected) experiments, to prove that 300 to 500 lbs. can be added to the weight of beef-stock over two years old, in the Prairie States, profitably, at 2*d*. a lb.

In the Western region, beyond the Mississippi and Missouri rivers, the natural supply of forage throughout the year far exceeds any demand made upon it since the buffalo disappeared, and there young animals have their greatest relative value. The only use of the cow there is to produce her calf and sustain it for a few weeks. So, while in New England the average value of a cow is £8 or more, and the calf, at birth, 4*s*., in Texas the cow is worth 32*s*. to 40*s*., and the calf from 8*s*. to 12*s*.

Judging from the price obtained and the taste of the markets, one would think that the best beef is that produced in the section where it is raised at the greatest cost. There has been great prejudice in the past against animals fattened on grass alone, and in the north and east nothing has been accepted as first-class beef unless stall-fed. In Baltimore and Philadelphia, however, there can always be found some of the best beef, taken directly from the famous blue-grass pastures of Kentucky and Virginia and this was true before the revolution wrought in the cattle of that region by the introduction of Shorthorn blood. Until very recently the Texans have been almost excluded from the markets, except as "stockers," or frames on which to build beef by grain-feeding, and even corn-fed Texans have stood at at the lowest figures

for beef. This has been mainly prejudice, however, and deserves to die out, as it is doing. Late reports speak of Texan beef as "improving in quality *and reputation*." No one doubts the desirability of improving the Spanish blood by mixture with earlier maturing, better beef-making breeds; but the excellence of the beef of a well-fatted "Texan," which never saw grain, or hay, nor stood under a roof, is undeniable, much as the *looks* of the animal belie the statement. Certainly, in my own experience, I never tasted better beef; and I particularly remember coming upon a little "bunch" of cattle running wild near the northern line of Texas, and shooting a three-year-old bull and heifer of the same age, neither ever touched by a human hand, whose beef was found equally good, and, being submitted to a pretty severe epicurean test, was pronounced unsurpassed.

With these remarks upon the general subject, let me turn more to the details of production, the transportation, the markets, and the exportation of American beef and beef-cattle.

Enough has already been said on the subject of production to show that there is little profit in raising beef on the Atlantic slope, and its production there in great quantity is impracticable; that in the Prairie country, east of the Missouri river, there are opportunities for profitably fattening more animals than can be bred; and that in the Plains region, beyond the Mississippi and Missouri, cattle can be reared until two or three years old (of Spanish blood, until four years old), cheaper than anywhere else.

Still keeping in mind the three regions thus described, a little explanation as to transportation may be useful. In the East there are so many country meat markets, and the demand so far exceeds the supply, that beeves are generally sold and butchered within a few miles of the place where fattened. The choicest steers only, such as command extra prices, are taken to the cities; they go by rail, at low freight rates, and and the distances being so short, they are delivered without deterioration in weight or quality; they are usually accompanied by the farmer or some local speculator, and disposed of to the city butchers at little expense for commission and handling. But five millions of people in the cities and large towns of the east must receive four-fifths or more of their meat by car transportation, from the grass and grain farms over 1000 miles to the west. Even the smaller towns depend mainly upon western supplies: a country butcher in a manufacturing village of 3000 inhabitants in Massachusetts, nearer to the farms of Vermont than the Albany cattle-yards, informs me that during the past two years, not over one fourth of

the beeves he has handled have been fattened in New England, and less than half of those were bred east of the Hudson.

In the Central region the interest centres at Chicago. There is situated the greatest live-stock market in the world, receiving and distributing western stockers, and receiving and forwarding beef-cattle, besides the trade connected with home consumption and the great meat packing establishments. Nearly all the business there is carried on at one place, the Union Stock Yards, covering 400 acres, and built in 1865 with a capital of one million dollars. This establishment handled during 1875 over 900,000 neat cattle, 400,000 sheep, and 4,000,000 swine; the total value of this stock being estimated at 23 millions sterling. The cattle of this region, when ready for slaughter, are easily and cheaply delivered at Chicago. The sales there are made by brokers, whose commission is 2*s.* a head for cattle; and the yard fee is 1*s.* each. The animals are forwarded to New York and other points in special cattle trains of slab-sided cars, accompanied by attendants in a "caboose" attached to the train. The load for a car is reckoned at 10 tons, and consists of from 16 to 20 beeves, according to size. They are driven from the yards through chutes, forced into the car, standing side to side across it, and packed closely so as to prevent motion and lying down. The railroad company gives no attention to the cattle except to make necessary stops, and provide yard-room for changes and rests. The men accompanying, one to every twelve or fifteen cars, attend to the feeding and watering, loading and unloading, and with long pikes they periodically *goad up* the cattle which may be down, and straighten out the ranks in the car. On long trips the animals are taken from the cars every 300 or 400 miles of travel, and rest usually a full day and night at each change. In journeys of any length the cattle suffer from the excitement and jolting, rubbing against one another and the car, from want of proper food, water, and rest, from the crowding and confinement, and from brutal treatment in loading and unloading. The shrinkage in weight is serious, from 5 to 10 per cent. for a trip of a 1000 miles or more. Such a journey as from Chicago to New York, for example, occupies about five days, including two stops of twenty-four hours each. As to the *manner* of car-transportation of cattle in the United States, it must be pronounced far behind the age, cruel to the animals, injurious to the meat, and detrimental to the owners. As to *cost*, the railway facilities eastward from the Mississippi Valley are more than sufficient, and competition produces low rates; during the past year

the total expense of moving beeves of 1200 lbs. from Chicago to New York, when in quantity, has been about 24*s.* per head.

In the Western country most of the cattle have to be driven long distances—from 100 to 600 miles—to reach suitable shipping places on railway lines, From Texas they drive 600 miles northward, to cattle stations in Kansas, the favourite points for shipment there averaging 500 miles from St. Louis, and 700 from Chicago; they also drive eastward, 100 or 200 miles, to railroad stations in Texas, which are 650 miles from St. Louis, and nearly 900 from Chicago. These drives are slowly made—about 10 miles a day. The cattle in large herds may always be driven through good grazing lands, and with proper management the cattle (especially if Texans moving northward) improve *en route*. A gain of a pound a day in weight is quite common in good seasons for a 900-lbs. steer, when on the drive two months. The average cost of these drives is about 1*s.* 8*d.* a head per hundred miles. The freight rates from points in Kansas and Texas are rather greater, relatively, than farther north. From Colorado and Wyoming territory, a rapidly growing cattle country, the favourite shipping point is Cheyenne, on the Union Pacific Railroad, 1000 miles west of Chicago. Railway freights are much higher west than east of Chicago, and it costs, for example to move a bullock from Cheyenne to Chicago, £2, this covering attendance, feeding, and the terminal charge for placing the animal in the yard; the freight alone is, by contract, for not less than ten carloads, 31*s.* per 1000 lbs. The journeys west of Chicago are harder, trains slower, rests less frequent. Between Colorado or Kansas and Chicago, there are usually but two changes, and sometimes only one. There seems to be less shrinkage in weight of North-Western cattle by car-transportation than in those of the South-West: their flesh appears firmer, and they are graded higher, and command better prices at Chicago. So a steer which would sell at the shipping-point in Texas for £3 12*s.* to £4, brings £4 12*s.* to £5 at Cheyenne, Wyoming. Last December a lot of 1000-lbs. Colorado cattle were bought at Cheyenne at an average cost of a trifle less than £4. 16*s.* a head, brought to New York by contract for £3 1*s.* each (making £7 17*s.*), and sold at an estimated dressed weight of 450 lbs. for nearly 4½*d.* per lb., or £8 2*s.* apiece. There was evidently no spare margin in this transaction, but the animals were ten days *en route*, with but three stops, had a hard passage, and lost over 100 lbs. of flesh each; whereas if they had arrived in good order, they would readily have sold at £2 more per head, affording a handsome profit. And had the same animals been

held over in the corn-states until the present time, at a cost of £4 per head (total £11 16*s.* to £12), they would now bring in New York £15 to £16 each.

The shipment to England of American dressed beef, which began hardly two years ago, and has since reached such proportions, attracts attention to the effect of this new trade upon home markets, and the provisions for meeting this outside demand. The exports, thus far, have been shipped from Philadelphia, New York, Boston, and Canada; but New York is the centre of the trade, a single dealer having sent out an average of 1000 carcases a week from that port for weeks in succession during the present year, and it is natural to go to that point for information on the subject.

Twenty years ago, about 150,000 beeves were received at New York during the year, and the average price was 5*d.* per lb. From that the receipts have steadily increased, until they are estimated for the present year at about half a million, with the prices, gold basis, standing just about as they did in 1856. There has been, however, a considerable fluctuation in the prices during these years, and other facts worthy of note. In 1860 the receipts were 227,000, and the average price for the year only 4*d.* per lb. At that time New York State ranked first in the sources of supply for this market, In 1865 the receipts were 273,000, and the price, under war pressure, reached the highest figure ever known, 8*d.** During the early part of that year (1865), cattle were sold in New York at 13½*d.* per lb., estimated dressed weight, and the United States Government bought immense quantities of beef under contract at 1*s.* Later the same year the contract price fell to 8*d.* The source of supply had so changed by this time, that half the total receipts were credited to Illinois and States farther west, New York being next in order. In 1868 New York State still held the second place, and Texas contributed 10,000 beeves. In 1870 the receipts were 356,000, and the average price declined to 7*d.*, and New York became the fifth in source of supply, Texas furnishing twice as many as the home State. In 1874 the price had fallen to 6*d.*; and of 451,000 cattle received, Illinois was credited with supplying one half, Texas 75,000, and even the far-distant Colorado became the rival of New York, each giving about 13,000. In 1875 and 1876 respectively, the receipts were 453,000 and 470,000, and the average price 5½*d.* and 4¾*d.*

* These prices and those immediately following, which are calculated from the United States paper currency, are subject to certain deductions, as explained by Professor Alford further on, to bring them to the true value of our money.—EDIT.

per lb. During the first half of 1877, the receipts of beeves were reported at 246,000, and the average price had advanced to 41*s.* 9½*d.* per 100 lbs.

It must be understood that in the New York market beef-cattle are sold at their estimated dressed weight, the merchantable beef only being from 56 to 58 per cent. (in some cases 59 per cent.) of their live weight. A steer whose live weight is 1000 pounds, is reckoned to weigh only 560 lbs., but the buyer gets the whole animal. The prices above quoted are in United States currency, and the relative value of the paper dollar and the gold dollar at the different dates must not be overlooked—in 1865 when beef was sold for 12½*d.* per lb., this meant 6*d.*, or less, in gold. Excluding the period affected by the war, the general average price of dressed beef in the New York market has been from 4½*d.* to 5½*d.* per lb., gold, for twenty years, and has ranged between those limits for the last eighteen months, standing at 5⅜*d.*, gold, the first week in July. The steady growth of the market, and the marked change in the sources of supply, are the most striking features of the figures above given, especially showing the increasing movement of cattle eastward. The great proportion of the receipts at New York credited to the State of Illinois, simply means that they are forwarded from the Chicago market, and thus invites attention to that point.

At Chicago the cattle sold in 1855 numbered but 10,000; in 1860, 156,000; 1862, 209,000; not yet equalling the New York market. But in 1865, 333,000 cattle were received, and from that time Chicago has led, and the growth has been very rapid. In 1870 the receipts were 533,000; in 1875, 920,000; and last year a round 1,000,000. As this is mainly a distributing market, three fourths of all cattle received being reshipped alive, all sales are by gross live weight, and are made, as a rule, at the Union Stockyards by brokers whose regular commission is 2*s.* a head. The prices correspond naturally to those of New York, with due allowance for transportation, shrinkage, and profits, so they need not be given here. The greater range in the prices at Chicago—as, for example, last year from 1*d.* to 3½*d.* per lb.—is accounted for by the fact previously mentioned, that it covers not only transactions in the best beef, all ready for the shambles, but thousands of "stockers," which are sold to be kept on the prairie pastures and among the corn-fields of Illinois and neighbouring States for from six months to a year, or more, before being forwarded to eastern markets. The same animals in large numbers thus pass through the Chicago market twice. The sources of supply at this point present the same features as at New

York. Up to 1865, the receipts were almost entirely from the great agricultural states, of which Chicago is the commercial centre. Texan cattle had begun to find their way to this market through Missouri in 1859—60, but the war then interrupted this movement. In 1867, however, 37,000 Texans were reported as received at Chicago, and 55,000 in 1868; besides these there were other thousands, originally Texan stock, but fattened in intermediate states, and credited to them upon arrival. In 1870 the arrivals from the far West began to be very large; Texas, Kansas, Nebraska, Colorado, and Wyoming furnishing the greatest proportion of the total receipts, and this continues to be the case.

In Texas, Kansas, Colorado, and Wyoming territory, cattle are sold without weighing, and with but a general reference to their weight. They may be quoted as follows;—At the "ranches" in Texas, yearlings, 16*s.*; two-year-olds, 24*s.*; three-year-olds and cows, 36*s.*; beef-cattle, £2 8*s.* to £3. In Kansas, on the railroad, yearlings, 24*s.*; two-year-olds, 32*s.*; three-year-olds and cows, 48*s.*; and beeves, mainly four-year-olds, 850 to 1000 lbs. gross, £3 to £3 12*s.* At railroad stations in Texas a shade lower. In Colorado and Wyoming there has been more demand for cows and young cattle for stocking new ranches, causing higher prices for such animals; two-year-olds, £2 8*s.*; cows, £3; but merchantable beeves, 9 to 10 cwt., have ranged from £3 12*s.* to £5.

Quotations might be given from the markets reports of various other places—St. Louis, Cincinnati, Buffalo and Albany, Baltimore, Philadelphia and Boston; these seven cities received from 100,000 to 500,000 cattle each during 1876, an aggregate of over 2,000,000. But no new facts would be developed by extended comparison; the prices, &c., would be seen to correspond with those of Chicago and New York. While local depressions and sudden advances might be observed—for such occur—the close connection between these several markets makes it impossible for material differences to exist any length of time which cannot be accounted for by geographical position, cost of transportation, and the like.

These facts as to the chief markets in the grazing districts, the feeding and distributing region, and the places of consumption and exportation, enable certain deductions to be made as to the present and prospective beef interest in America.

Eastern consumers and the exporters must continue to depend for their main supply upon the great corn-states, represented by the Chicago market; and as the demand upon that

region for fat cattle will continue to exceed the natural increase of their own herds, they in turn must look the far West and South-West for most of their young animals or "stockers." What is called the *Prairie* country, east of the Missouri, must be stocked largely from the *Plains* region, west of that river. The farmers in all parts of the country, who raise comparatively few animals from the calf, must compete with these larger supplies, and their prices will be controlled accordingly. It is evident, therefore, that the *cost* of producing a two- or three-year-old bullock on grass alone, in the vast pasture which used to be called the great American desert, will largely determine the price of cattle in Chicago. Add the corn-crop (maize) and its value in the Mississippi basin, and we have the two chief factors governing the price of beef on the Atlantic slope, and, it may be, in Great Britain also.

Let us now follow an animal in its course from its native pasture to the port of New York, or to Liverpool. We will start with the supposition that in the chief grazing district of Texas a steer, ready to start to market in the spring at four years old, is worth £3 12*s*. This is for a first-class animal of its kind, of better form and beef-quality than the ordinary run of the old Spanish Longhorns (perhaps sired by a grade Durham), and weighing 1000 lbs. Starting in March as one of a large herd, with good grass springing up all along the path, this animal may reach the railroad at Wichita, Kansas, during the month of May, weighing 1050 lbs. or more. Allowing 12*s*. to cover the course of the drive and all expenses, including a probable change of ownership, the value of the animal on leaving the Kansas shipping station will be four guineas. Thirty-two shillings more will place it in the Chicago yards, weighing not much less than at its start, or, making generous allowance, let us say 960 lbs., and that sum will also cover the expenses of sale there. He will be rated as a "stocker" now, and sold for $1\frac{3}{4}d.$ per lb. gross, or thereabouts, bringing £6 16*s*. to £7, or a profit of 20 per cent. at this point. Let him be sold at Chicago for £7, and taken to an Illinois pasture or corn-crib; he will return to market in the autumn, fatted mainly on grass, weighing 1150 lbs., and will sell for £10—a handsome profit on the operation, especially when, as is often done in that state, from 100 to 1000 head of cattle are handled together in this way. Or let him rather be taken from Chicago, June 1st, at £7, and returned the following winter at 1275 lbs., and sold then at about $2\frac{1}{2}d.$ per lb. gross, bringing £12 16*s*. We will call £2 16*s* of this increased value the profits of fattening, being over 25 per cent. on what the animal cost its seller. Our bullock may

now be taken to New York for 24*s.*, and reach that city within a year after leaving Texas, weighing rather over 1200 lbs., and costing its owner then, as above, £14. Sold now on the New York system, at 5½*d.* per lb., reckoned 56 per cent. dressed beef, there will be a profit of 16*s.* to 20*s.* on the animal as it passes to the *abattoir*. The profits of slaughtering and wholesaling the beef are well known. The butcher, who buys the live animal at about £15, reckoned at 5½*d.* per lb. dressed weight, can well afford to sell the carcass to the wholesale dealer at 5*d.* per lb., for the hide, tallow and offal will pay all the expenses of handling and dressing in New York, and yield large gains beside. And there is still room for the jobber to make handsome profits before the beef is cut up and retailed.

The retail prices obtained for meats have little influence upon the business, and need not enter into a general consideration of this subject. The dealers in our local markets, as a recent writer has remarked, "seem to have a grip on their customers, and squeeze them persistently, unmercifully, and unreasonably, especially in our eastern cities." The retail meat-markets maintain no proper relation in prices to the wholesale; witness the fact that while during the last three years the average price, wholesale, per pound, has ranged from 6*d.* down to 4¼*d.* per lb., and up to 5¾*d.* again, for beef at the same quality at the same market, there has, during this period, been no perceptible change in retail prices. It is often remarked that the butchers and retail dealers in our cities and large towns are the most prosperous of the business men, and amass fortunes rapidly.

The foregoing sketch shows eight different owners, besides three brokers, who each sell the animal or its beef at a profit before it reaches the consumer in New York. The figures given accord with the facts as to steers of the kind described, during the average seasons of several years past, although higher all the way along than quoted for 1876. Yet it will be noticed that the profits are very large at all points. The drover who bought of the "ranche-men," and sold in Kansas, made the least, proportionately, about 8 per cent. for four months' time and capital; but this driving and sale is as likely to be done as the stock-raisers themselves, or their employés, as by a middle man as above supposed. The dealer who bought in Kansas and sold in Chicago, made £1, or more, being nearly 20 per cent. on a transaction which might be repeated monthly, at least. The prairie farmer's profits for feeding, which were reckoned at 56*s.*, or 25 per cent. on the capital, occupied a year, practically. The shipper from

Chicago to New York shall be taken at the lowest estimate, 16*s*. profit, being six per cent., and he, constantly engaged in this business, can "turn" his capital in this way twenty times a year. (I stop at this point, without tracing the profits in slaughtering and selling, because it is in the yards that the exporters buy, and this subject will be considered with ultimate reference to their trade.) Here are aggregate profits of £4 16*s*., or one third of the £14 16*s*. at which the animal was sold at the New York yards.

Just so much as the profits of these middle men can be curtailed, and the expenses of transportation economised, can the selling price of the bullock be reduced in New York. Leaving freights at the rates cited, but reducing the several items of profit enumerated about one half (which is plainly possible), it is evident that such beeves *can be* placed in New York at £12, instead of £14 16*s*., and still allow ample gains to all concerned. This makes it possible for such beef to be sold in New York at $4\frac{1}{2}d$. per lb. instead of $5\frac{1}{2}d$., as supposed in the case taken. And, in fact, the average price of this trade in that market during the last nine months has been 5*d*. per lb., although, as late as July 15, this was $5\frac{5}{8}d$. per lb.

But this still supposes that the steer necessarily cost 72*s*. on its Texan range, whereas it is certain that bullocks of 1000 lbs. weight can be raised on the plains between the 95th meridian and the Rocky Mountains, and delivered at the shipping points, at lower prices than they now command.

A full description of cattle-raising in Texas and Colorado would prove this conclusively. But it is too long a story to insert here, and so much has been written upon the subject of late, that it is becoming quite familiar to all interested. I will only refer to some letters published in the London 'Spectator' in March, 1877, as giving a graphic account of "Cattle Herding in the Great West," and add a few examples of the profits of the business.

In 1858, an ordinary farmer in Tennessee, who had toiled there for some years and gained nothing but a living, moved to the central part of Texas, his possessions then being 60 cows, 10 horses, and other effects, worth in all not over £500. He engaged in stock-raising at his new location, applied all his gains to the increase of his business, made no special hits, and his estate at the time of his death, two years ago, consisted of 50,000 acres of land and as many cattle, with other property, representing a total value of £120,000.

In 1872 five men made up a capital of £10,000, cash, and, buying cheap lands in Texas, began stock raising. They now own 250,000 acres, largely fenced; they have purchased over

£100,000 worth of stock cattle since they began, and have sold £126,000 worth; their present property is estimated at £170,000 clear, and thus is shown a profit of almost £200,000 in five years.

(*To be continued.*)

FORMATION OF BLOOD FIBRIN.

M. Hayem described to the French Academy microscopical studies on this subject. He states that the bodies he calls *hæmatoblasts,* which can be recognised in living animals, experience great alterations when they pass out of the vessels. He states that when a preparation of coagulated frog's blood has a current of iodized serum passed through it the "hæmaties" may be seen disposed in rosettes around masses of hæmatoblasts, fixed in their positions by filaments springing from the centre of the rosettes. This mode of treating the blood displays the hæmatoblasts transformed into irregular, angular, stellate corpuscles, with extremely fine delicate fibrils springing from them, branching and forming a network not easily seen, except they are coloured with iodine. Human blood exhibits these changes very plainly. The hæmatoblasts of the ovipora, like those of the higher vertebrates, experience rapid modifications. A few minutes after the preparation is made they become much changed, and may be seen in the interspaces between the hæmaties as little corpuscles, mostly spinous, isolated, or grouped in chaplets; afterwards in small irregular masses. These corpuscles are in general more highly refractive than the hæmatoblasts that form them, and are often of a greenish-yellow colour. If blood is taken from a living animal and diffused through enough iodized serum to hinder coagulation, the hæmatoblasts appear isolated and in their normal shape, but after some hours they exhibit small prolongations that seem formed of their own substance. In defibrinated blood neither hæmatoblasts nor their corpuscles are found, and this is the case with blood taken from a dead body after *post-mortem* coagulation. The hæmatoblasts, as well as being destined to become adult red globules, possess special properties, and may be considered as a third species of blood elements. Are they the determinating cause of coagulation? This seems probable. At any rate, three factors are concerned in coagulation; a substance proceeding by exosmose from the hæmatoblasts, and which perhaps represents paraglobulin; isolated or grouped corpuscles formed by them in

the process of cadaveric change, and from which the network of fibrils springs; and a substance primitively dissolved in the plasma, modified in the presence of the matter exuded by the hæmatoblasts, and forming by precipitation nearly all the fibril network. In their normal state the smallest hæmatoblast corpuscles are about 1 μ in diameter, and the largest rarely more than 8 μ. In intense anæmia, especially when allied to a cachectic condition, we see voluminous masses formed by the hæmatoblasts 60 or 70 μ in their largest diameter, but usually the network springing from them is less than in the normal state. In acute maladies, the hæmatoblasts are less abundant, but, contrary to what is observed in cachexies, the fibrin forms a rich and thick network.*—*Journ. of the Royal Microscopical Society.*

DEVELOPMENT OF THE NERVES IN THE CHICK.

Mr. A. Milnes Marshall has communicated an important paper to the 'Proceedings of the Royal Society' (No. 179) on the development of the animal nerves. He says that in the investigation he undertook, embryos of ages from thirty-six hours to four days were employed. These were, for the most part, hardened by immersion in picric acid, prepared after Kleinenberg's method, for three to five hours, and then in alcohol of gradually increasing strength. It is to the use of picric acid as a hardening agent that the results obtained are believed to be in large measure due. All the more important results have, however, been confirmed by specimens hardened in chromic acid in the usual manner, though such specimens have almost invariably proved inferior in distinctness to those prepared with picric acid. Good results have also been obtained from duck-embryos hardened in picric acid.

Owing to the less compact character of the mesoblast of the head and to the absence of protovertebræ, the development of the cranial nerves is easier to study than that of the spinal, and will therefore be considered first.

Transverse sections through the hind brain of a forty-three hours' chick show that the cells along the median dorsal line are more spherical in shape and slightly smaller than those composing the rest of the brain; also that these spherical cells grow upwards, so as to form a conspicuous longitudinal ridge running along the upper surface of the hind brain immediately beneath the external epiblast.

The ridge is traceable along the whole length of the hind

* 'Comptes Rendus,' Jan. 7, 1878.

brain, but is much more prominent posteriorly than it is in front, where it gradually disappears. At intervals the ridge becomes more prominent, and grows out laterally into paired processes. These processes are the rudiments of the cranial nerves; the cells composing them are, like those of the ridge itself, small and spherical, and differ markedly from both the elongated cells of the external epiblast, and the large, loosely arranged, branching and irregularly shaped mesoblast cells.

At forty-three hours the first pair of these processes arises from the anterior part of the hind brain; it subsequently develops into the fifth nerve.

Immediately in front of the auditory involution (which at this period is a wide and very shallow pit) a large outgrowth arises on either side, from which the facial and auditory nerves are derived.

A large outgrowth from the median ridge commences on either side a short distance behind the auditory pit, and is of considerable longitudinal extent, reaching as far back as the middle of the first protovertebra. From this outgrowth are developed the glosso-pharyngeal nerve and the several branches of the vagus.

The outgrowth of spherical cells from the summit of the neural canal, forming the longitudinal ridge above alluded to, is not confined to the hind brain, but is continued backwards without any break some distance down the spinal cord. In the spinal cord, as in the brain, the ridge gives off at intervals paired lateral processes, which extend outwards just beneath the superficial epiblast. These processes correspond in number to the protovertebra, and are the rudiments of the posterior roots of the spinal nerves. Each process has a longitudinal extension equal to about half a protovertebra, opposite the posterior part of which it is situated. In the case of the first few spinal nerves the processes are somewhat larger, and extend back so as to overlap the anterior parts of the succeeding protovertebræ.

This description, it is believed, differs from any previously published account of the development of the nerves in the chick, but agrees remarkably closely with Balfour's* account of the development of the nerves, both cranial and spinal, of Elasmobranchs, and is in accordance with Hensen's† observations on the development of the posterior roots of the spinal nerves in the rabbit.

Opposite the centre of each protovertebra the external epi-

* 'Phil. Trans.,' vol. 166, part 1.

† 'Zeitschrift f. Anatomie u. Entwickelungsgeschichte,' 1876, Bd. i.

blast grows downwards as a small conical process on either side of the spinal cord and in close contact with it. These processes were mistaken by His* for the commencement of the spinal nerves, but are clearly seen to have no connection whatever with the nerve-rudiments. His is the only previous observer who assigns an epiblastic, instead of a mesoblastic, origin to the nerves in the chick; he, however, derives them directly from the external epiblast, while, according to the description just given, they really arise from the involuted epiblast of the neural canal.

From their mode of origin the cranial and the anterior spinal nerves will be seen to be all connected together at first by a longitudinal commissure of spherical cells, while the two nerves of each pair, whether cranial or spinal, are also connected together across the top of the neural canal.

The attachment of the nerve, whether cranial or spinal, is at first to the extreme summit of the neural canal. Shortly after their appearance the attachments shift slightly outwards, and in the case of the spinal nerve, become much more slender. The shifting is believed to be apparent rather than real, and to be caused, as first suggested by Balfour, by rapid growth of the cells at the summit of the canal, which has the effect of separating the roots of the two sides from one another and forcing them apart.

Though the proximal part of the nerve-root becomes thus more slender in the spinal nerves, the distal part enlarges considerably, and grows down as an oval mass (the spinal ganglion) between the spinal cord and the protovertebræ. At this period the most prominent part is situated opposite the interval between two protovertebræ.

During the third day a great change occurs in the point of attachment, which is now considerably lower down, in the position occupied by the root in the adult. The nerve is now attached, not by its apex, but by a small process growing out from its side, and projects considerably above the point of attachment. Owing to the surrounding mesoblast this stage is very difficult to investigate; but the appearance strongly suggests that the original attachment of the nerve to the summit of the cord is lost, and a new one acquired lower down, and that the projection of the nerve above the point of attachment, which becomes inconspicuous very shortly afterwards, is a remnant of the original attachment.

The anterior roots of the spinal nerves arise later than the posterior, and have not been observed earlier than the latter part of the third day. They appear as small outgrowths from

* 'Die erste Anlage des Thibelthierleibes.'

the lower part of the sides of the spinal cord, and from the first occupy the position held by them in the adult. This position is indicated before the actual appearance of the roots by a slight convergence of the cells at the outer part of the cord. The anterior roots are very slender, and consist of much elongated cells, contrasting strongly with the spherical or oval cells of the posterior roots.

Early on the fourth day each anterior root consists of a number of such processes placed one behind the other, and lying opposite the anterior half of a protovertebra. The total length of attachment of an anterior root on the fourth day is equal to about half a protovertebra.

The anterior roots grow outwards, and early in the fourth day join with the posterior roots to constitute the spinal nerves.

In the cranial nerves no anterior roots have been observed; but as the observations have not been carried beyond the fourth day, and certain of the cranial nerves have not been observed at all, no conclusion as to their non-existence is to be drawn from this fact, which can only be considered a doubtful confirmation of Balfour's failure to discover anterior cranial roots in Elasmobranchs.

The facial and auditory nerves have been seen to arise as a single outgrowth just in front of the ear; this speedily divides into an anterior part, which runs downwards in front of the auditory vesicle and becomes the facial nerve, and a posterior part, which is closely applied to the anterior wall of the auditory vesicle and becomes the auditory nerve.

The fifth nerve arises as a single outgrowth on either side, the position of which is very constant. The so-called "hind brain" consists at forty-three hours of an apparently variable number of dilatations separated by slight constrictions, and gradually decreasing in size from before backwards. These dilatations are well known, but appear to possess more constancy than is usually ascribed to them; the most anterior of them is but little smaller than the mid brain. From it the fifth nerve arises in all the specimens examined.

The third, fourth, and sixth nerves have not been observed; but a slight outgrowth from the summit of the mid brain, noticed in two specimens only, may prove to be the commencement of the third or fourth.

The olfactory nerves arise towards the end of the third day as solid outgrowths from the anterior end of the fore brain, close to the median dorsal line, and exactly correspond in mode of development and in appearance with the other cranial nerves and with the posterior roots of the spinal nerves. They arise at a time when a section through the

anterior part of the fore brain transverse to its longitudinal axis, and passing through the olfactory pits and nerves, is almost perfectly circular in outline, and must, therefore, be described as arising from the fore brain itself, and not from the cerebral hemispheres, with which they have no connection at first, and which are not nearly such prominent objects at the end of the third day as they are often described to be. There is no trace of an "olfactory vesicle" in the early stages.

This mode of development of the olfactory nerve in the chick would seem to be of considerable morphological importance, since, if confirmed, any arguments concerning the composition of the skull, based on the distribution of the cranial nerves, would have in future to take the olfactory nerves into consideration.—*Monthly Mic. Journ.*

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 9TH, 1878.

Present.—The President in the chair; Professors Brown, Pritchard, and Williams; Messrs. Batt, Blakeway, Broad, Collins, Cox, Cuthbert, Dray, Fleming, Greaves, Harpley, Smith, Taylor, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

The Secretary announced that the following letters had been received:

Letters from Professors Walley and McCall, Messrs. Cartwright, Moon, Withers, and Balls, regretting their inability to attend the meeting.

A letter was also received from Mr. Reynolds, stating he was unable to attend, and asking whether it would not be irregular at the present meeting to discuss the President's motion for the suspension of bye-laws 32 and 33.

The Secretary announced that Mr. Fleming had presented to the museum a specimen of diseased hock.

On the motion of Mr. Broad, seconded by Mr. Dray, a vote of thanks was awarded to Mr. Fleming for his presentation.

Examinations.

At meetings of the Court of Examiners, held on the 1st, 2nd, and 3rd April for the Pass Examination, 16 students passed and 8 were rejected.

At meetings held on the 4th and 5th April for the "second Examination," 15 students passed and 2 were rejected; and on the 6th and 8th April 8 students passed their examination under the two and three years' system, and 7 were rejected.

The obituary notice was read.

The Secretary stated that 26 registers had been sold and 21 were in hand, and, as registrar, he asked the sanction of the Council for the republication of the register, in order to include the new members of the profession. This was agreed to.

Some conversation arose as to whether the following question and answer, as reported in the proceedings of the last special meeting, were correct:—The question Mr. Williams asked was, whether the inspector without the sanction of the local authority could order the slaughter of diseased animals under the present Act? *Professor Brown:* "Certainly not; the local authority were bound in the first place to inquire into the correctness of the report. The inspector would have no such authority without the local authority delegated it."

Professor Williams said that the observation of the judge in a case against himself seemed to imply the opposite. "He had to inform the jury that, so far as he could judge, the defender had no power in virtue of his office to order the slaughter of these cows. That matter rested entirely with the local authority, who could not devolve the whole of their statutory powers upon an inspector. The duty of the inspector after the inspection plainly was (assuming that he was not acting with the assent of pursuer) to give immediate notice, the effect of which would have been to bring into operation the statutory rules already referred to. Then supposing both animals to have been affected with disease (pleuro-pneumonia), the pursuer's case would not necessarily fail, because the defender had no right to give the order for slaughter." Of course he ordered slaughter, because he had always understood that an inspector was to order slaughter with the least possible delay. The inspectors had power delegated to them in general terms, but the judge in the case he had referred to said that it must be done by the local authorities in each individual case.

Professor Brown said it was a doubtful point. The local authorities might exceed their powers, and the judge rule against them. In the present bill the question was raised by the draughtsman, and he considered the clause sufficient to cover it.

The Secretary stated that a letter had been received from Mr. Powys, asking for copies of certain motions which had been supplied.

A letter had also been received from Mr. Loch, enclosing a copy of the amended "Contagious Diseases (Animals) Bill."

A letter was read from the Clerk of the Privy Council Veterinary Department, dated 14th March, acknowledging the receipt of a letter written on the 7th March, enclosing report of the

Committee appointed by the Royal College of Veterinary Surgeons on the Contagious Diseases (Animals) Bill, and stating that it would be submitted to the Lords of the Council.

The Secretary read the following report of the Committee on the Bill:—

"At a meeting of the Committee appointed by the Council of the Royal College of Veterinary Surgeons to take into consideration a letter from the Lords of the Privy Council, relative to the Amended Contagious Diseases (Animals) Bill now before Parliament, and requesting observations thereon,

"The Committee have to report that after carefully considering the provisions of the Bill, they are of opinion that these provisions are, on the whole, of a satisfactory character, and if efficiently carried out will largely tend to prevent and suppress—if they do not entirely succeed in doing so—cattle plague, pleuro-pneumonia, and foot-and-mouth disease.

"With regard to the other maladies alluded to in the Bill, viz., sheep-pox, sheep-scab, and glanders, and farcy, the Committee cannot make any observations, as they are not the subject of special legislation in this Bill like the afore-mentioned diseases.

"Nevertheless, the Committee would beg to point out that these disorders are very contagious and destructive, and should receive equal attention in proposed legislation.

"The Committee also deem it their duty to point out that there are other contagious and dangerous diseases not mentioned in the Bill, but which should be considered in dealing with this important subject. Among these maladies we may specify rabies, swine plague, and splenic apoplexy, or anthrax fever. They are likewise of opinion that the power of entry, in cases where glanders or farcy exists, or is suspected to exist, should be given to the veterinary inspector.

"With regard to the 'declaration of freedom from pleuro-pneumonia,' the Committee consider that the period of fifty-six clear days mentioned in the Bill does not afford absolute security, as the latent or incubative stage occasionally extends beyond that time.

"In clause 20 (page 7) paragraphs 1 and 2, the Committee think that in order to ensure a clearer definition, instead of the word 'cessation' of the disease, it would be better to substitute 'after date of complete recovery of the animal last affected.'

"With regard to foreign animals, the Committee are strongly of opinion that slaughter at the port of embarkation is greatly to be preferred to that at the port of debarkation, as it would reduce in a much greater degree the risk of importing contagious disease.

"Quarantine, to be safe, will require the exercise of the greatest vigilance and skill on the part of the veterinary inspectors and superintendents.

"The Committee observe, with much satisfaction, that local

authorities must appoint a member of the Royal College of Veterinary Surgeons as veterinary inspector. The urgent necessity for this step has long been felt, and its importance is now immensely enchanced from the fact that the Bill imposes such serious restrictions on owners of animals, which the employment of fully qualified and competent men can alone render acceptable to them.

"The Committee are confident that the success of legislative measures for the prevention and suppression of contagious diseases in animals, must greatly depend upon the skill and judgment of the inspectors; for owing to the employment hitherto of very many men who were unacquainted with the nature and symptoms of these disorders, much hardship has been inflicted on stock owners, and the objects of previous Bills have been in a great measure defeated."

Mr. Broad moved and *Professor Williams* seconded, "That the report be received."

The motion was carried.

Professor Brown then at some length entered upon an explanation of several points in the Bill. What the Council had to apprehend was that the Scotch authorities would use their influence to get the word "veterinary" extended to include holders of the Agricultural Society's certificate. It was a point on which he should like to have the opinion of the Council with reference to the action which ought to be taken. His own feeling was that it would be far better to strike out the word "veterinary" altogether and content themselves with the use of the word "inspector," rather than extend it to include persons to whom the word would not properly apply. This was a point upon which the promoters of the Bill probably had no strong opinions, and any representation coming from the Council might have some weight when the Bill reached the House of Commons.

Some conversation then ensued as to the best course to be pursued, some of the members urging that the word "veterinary" should be excluded before the word "inspector."

The President thought the best plan would be to adopt in Scotland the same expression as in Ireland, and the term left undefined.

Mr. Greaves thought it would be an injustice to professional men in Scotland if those who only held the Highland and Agricultural Society's Certificate were admitted on an equality with the veterinary surgeons who held the diploma of the Royal College of Veterinary Surgeons. He also thought it would be a great injustice to stock owners to appoint inspectors who were incompetent for the office. He was entirely of the President's opinion that it would be better to leave the matter the same as it was in Ireland, namely, to call them inspectors but to deny them the power to call themselves "veterinary" inspectors.

After some further conversation it was ultimately resolved to

give Professor Brown discretionary power as to what course should be advised.

Medical Act Amendment Bill.

The Secretary read the following Report of the Committee :—

A letter containing the following Resolution was submitted to the Lord President of the Privy Council—Resolved : " That the last paragraph of Clause 22, is very objectionable—that nothing in this section shall impose a fine on a person engaged solely in the cure or treatment of the diseases or injuries of animals and not of human beings" is objectionable from the fact that it protects unqualified persons who are engaged in the treatment and cure of the diseases and injuries of animals.

The Committee suggest that either the clause should be struck out, or words, 'any duly qualified person' inserted.

The Secretary read a letter from Prof. Brown, in which he stated that on March 16th, he received a letter from the Clerk of the Privy Council, stating that the Lord President had not the smallest objection to the omission of the last paragraph of Clause 22, which was only introduced with the view of preventing the possibility of any vexatious proceedings being instituted against members of the Royal College, and that he had instructed the draughtsman to remove the paragraph in question.

The Secretary stated that in drawing the college dividends in January last it was found that the sum of £122 16*s*. 3*d*. consols purchased last October, for the College Fund had been wrongly invested by Sir Samuel Scott & Co., the sum having been added to the Stock of the Royal College of Veterinary Surgeons instead of the College Fund. Sir Samuel Scott and Co., had written that for the purposes of the transfer it would be necessary for Messrs. Cartwright, Balls, and Collins, to attend the bank or that a power of attorney should be obtained. It was thought proper to obtain the power of attorney, and the sum had now been properly invested in the College Fund.

Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £130 5*s*. 2*d*., which the Committee recommended should be discharged.

The Secretary explained that the discrepancy of the £1 in the accounts, previously referred to, was in consequence of that sum having been underdrawn in October last, a cheque for £30. 0*s*. 7*d*., having been drawn instead of for £31 0*s*. 10*d*. He asked permission of the Council to sanction a cheque for £1 0*s*. 3*d*., to be drawn in order to rectify the mistake.

The permission was granted.

The Treasurer's accounts and balance sheet were read and received and adopted.

Cheques were ordered to be drawn for the current expenses.

Secretary's Salary.

Mr. Dray moved that the Secretary be re-allowed the original sum of £20 every year for hire of servants and also to be re-imbursed for any deduction made on this head during the past year, namely the sum of £10.

Professor Brown seconded the motion, which was carried.

The Fitzwygram Prizes.

The President announced that instead of at Easter, as formerly, he had deferred these examinations to the summer, in order to suit the convenience of the London and Edinburgh Schools, whose sessions did not occur at the same time.

The examinations were fixed for the 1st of June, and the President, at the express wish of the Council, agreed to select his own examiners.

The President said that there was a motion standing in his name for the suspension of Bye-laws 32 and 33. The notice was only given on the 8th of March, and therefore the matter could not be considered at the present meeting. He wished that it could have been considered, and he thought that there were very good special reasons at the present moment why it was very desirable it should be; but it could not be considered, and there was an end of the matter. Perhaps, however, he would be allowed to make a remark, because a misconception had occurred on the subject, namely, that the proposal he made would admit an inferiorly educated class of people into the profession. The resolution was to allow those who had studied the full term at the recognised Veterinary Colleges to pass the usual full examinations, only with the difference that they might pass the three examinations at one and the same time. In fact, the resolution might have been so worded, but the only thing which prevented this was the existence of rules 32 and 33.

The Annual Meeting.

It was arranged that the annual meeting be held on the first Monday in May at 1 o'clock.

The Secretary stated that the following gentlemen had been proposed as members of Council at the ensuing election:

The President proposed Mr. Jas. Collins and Mr. John Roalfe Cox, London.

Mr. Dray proposed Mr. Coates and Mr. George Williams, London.

Mr. Cox proposed General Sir Frederick Fitzwygram, London.

Mr. Wm. Whittle (of Worsley, Manchester), proposed Mr. George Morgan, of Liverpool, and

Mr. George Fleming proposed Mr. Gowing, London.

The Annual Report.

Messrs. Cox, Dray, Fleming, Woodger, and the Secretary were appointed as a committee to draw up the Annual Report.

Mr. Alfred Withers and Mr. Thomas Moore were appointed auditors.

Mr. Dray and Mr. Moon were appointed members to compose the dinner committee.

SPECIAL MEETING.

The meeting was then made special, for the further consideration and adoption of Bye-law 50; but the President said that if the proposed alteration were adopted at the meeting, it would be necessary to hold a special meeting seven days hence, which would be somewhat inconvenient. In consequence of what passed some time ago at the Council meeting, he had given a notice of motion to alter Bye-law 50, line 5; to insert in lieu of "or a certificate of liberal examination by the College of Preceptors," "or after an examination by the College of Preceptors on questions to be fixed from time to time by the Council." That would also involve another special meeting, and as they involved the same principle, he proposed to adjourn their consideration for three months, when one special meeting would be sufficient.

This having been agreed to, the proceedings terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

At the ordinary meeting of the above Society, held at 10, Red Lion Square, March 7th, F. J. Mavor, Esq., in the absence of the President, took the chair.

Mr. Alexander Mavor showed an interesting specimen of a calculus from the parotid duct of a horse, a rather rare occurrence, the various pieces fitted together in a sort of chain. They were removed during life by operating for a fistula; when they passed out the parts soon healed.

Mr. Fleming observed that the case was interesting, as there were so many pieces, and that the fistula had healed so quickly, for, as a rule, these fistulas were very troublesome.

Mr. A. Mavor said there were originally five openings leading into the duct, and now nothing was apparent. He did not know if the parotid duct were destroyed. At the last the horse was nearly starved. The enlargement was three years forming, and gradually increased in size, and ultimately prevented the animal's eating. The analysis made of the calculi returned the weight at 1868 grs. Excepting a mere trace of organic matter the calculi were wholly composed of carbonate of lime; they were soluble; brisk effervescence taking place in dilute mineral and acetic acids, supersaturated with ammonia, gave a large precipitate of oxalate of ammonia. There was only one side affected. The horse was about ten years of age, and in regular work. In operating he had cut into the duct.

Mr. Hancock then submitted a specimen of tumour taken from the

rectum of a small pony, 8 or 9 hands high, very aged. It was supposed to have piles. Finding the tumour, and that the bowels were confined and a difficulty of passing the fæces, he administered a mild purgative, and, knowing that in human surgery there were two forms of removal—ligature and cautery—he determined on the latter, and, bringing the tumour well out of the rectum, cauterised it. No fistula followed, and the part healed with a slight cicatrix.

Mr. Fleming thought it scarcely a tumour, but more like a duplicate of the membrane.

Mr. Moore, sen., concurred with the opinion offered, and that it had hardened by exposure to the air.

The Chairman also thought it more due to contraction of the sphincter embracing the portion of gut, which had ultimately hardened.

The adjourned discussion on rabies was then resumed.

The Secretary (Mr. James Rowe) said:—Regarding a few points touched upon in the essay and in discussion, he had not seen an instance of rabies in a stray or neglected dog; in the practice of others he had found rabid dogs in confinement, and assumed they were sent by their owners. Found it difficult to believe that no case had yet appeared in the Dogs' Home, seeing how many animals are there congregated, and that they are some days together. If we were to accept it as a fact (bearing in mind that the keeper and manager are not professional men, and there was, he believed, no veterinary inspector), and if the spontaneous generation of the disease theory had any weight, or if the mongrel and stray class are the medium of mischief, there was much to confound us in our search for its appearance and spread. He denied the spontaneous theory, feeling our ignorance is great when we make it our basis of belief. Did not deny the curability of the affection in its earliest stages, but believed that the veterinary practitioner would hardly find assistants to help him treat the case, or from the exceptional risk of inoculation himself manually perform his duty as earnestly as he would in the treatment of *every* other animal affection. He had been rebuked for his temerity in handling such cases, and the thought of the risk incurred, and happily averted, was very deterring to a continuance in the same manner. He noticed writers to the *Field* and others ask boldly why do not veterinary surgeons personally treat such cases and record their experience? and he imagined that the writers had not themselves faced the disease, or they would hardly ask a veterinary surgeon to coolly approach an animal he probably never saw before, treat the local injury, and administer medicine.

Last February 2nd he had to attend a rabid Dalmatian dog, loose in a private house. Found he was snappish and violent in starts, dating from some four days prior; that he ran from room to room, resting nowhere, and barked at nothing, the howl being distinctive. The owner, to confine him in one room, had threatened him with a stick, which the once quiet pet dog now

seized and crunched; the owner ramming the stick down his throat, shut the door, but he bounded through the window, cutting his mouth and foot, and when he reached the house had left blood-trails about the place. Would have risked leading him home; but those who knew him would not chain him, averring he would not allow any one to do so without injury. Having undertaken to poison the dog, he syringed H.Cy. down his throat as he stood under the table; he grabbed at the syringe and then at him, and had he not seized the nape of the neck, and being left-handed, emptied the syringe, he might have dreaded the result. No *post-mortem* was allowed. Referred to this case, as he bit two other dogs a few days prior, about January 29th. Knowing one well, the owner was cautioned to let him have early information if anything happened. The wound near the mouth soon healed without treatment. On the 13th saw him again; he was restless and irritable, previously a very quiet beast, always with the park-keeper, his owner. 14th.—Was received and put in a loose box, on the chain, having gnawed both legs, and being excitable, and with a changed bark, champing the jaws coutinually as if the hair around the mouth interfered with him. 18th.—Had dropping of jaw; was very quiet, the eyes and nose discharging thick mucus which was not apparent the previous day. Had apparently been eating his fæces, the mouth being full of fæculent matter. 19th.—Found dead in the morning. The *post-mortem* showed no satisfactory or conclusive results: the intestines and stomach were empty of food and foreign agents; the trachea was only flushed to a slight degree at larynx; meninges of brain injected, not apparent to any great extent either in atlas or dentatal part of medulla oblongata. Leg sores scabby, and no more bitten. The parts were left with Professor Axe, who also was not quite confident as to the case being rabies. The dog was some six years old. He fails to see how raising the tax would benefit the dog or his owner; it would not lessen the number of coarse-bred dogs among the middle class, finding one was as much estimated as the other by the owner, and would only exempt the blind man. That dogs have increased is doubtless true, the numerous dog shows having enhanced their breeding and value; but he was unaware of any outbreak of rabies having resulted from such shows having been held.

In treatment it escaped him what the essayist advocated in regard to the supposed rabid dog; whether to destroy it at once, or let it live its life out under the scrutiny of the veterinary surgeon, as confirmative or not of the disease; wherever he could he would endeavour to pursue the latter course, one benefit, professionally speaking, would be in the examination of the lesions towards arriving at a better knowledge.

The legal question concerned us not a little, and with it we should associate mental disease, excitement, a brooding, or a pseudo-hydrophobia in the human subject.

Lastly, and not least by far, the *moral influence* now asked of

us by the victims of bites, or those scared by the company of rabid patients. There we could not be too careful, and there we were the allies of the sister profession, who were beginning to look to us with confidence to recognise a fell disease no less fatal to our patients than to theirs, and which our individual efforts may do "much" to diminish in numbers. He would ask, can we not distinctly judge between epileptic fits from any cause and rabies? and between fits from teething, occasional excitement, viciousness natural, or the result of preceding ill-treatment, and rabies? Assuredly we can, and so also can we quiet the alarm of a person bitten under such a state of things. He sincerely hoped that the many who had consulted him for themselves had not done so in vain, and that his personal experience from bites under many conditions was a sufficient guarantee for his opinion. Not long since he paid a guinea claim for a bite, which the owner first paid, then deducted from the account a month or more after. There a passer-by was snapped at by his patient, who unknowingly brushed him as he went; the claim was for actual expenses. In another submitted to him for an opinion £25 was claimed and paid in opposition to his opinion, the dog being sound in health; the man worried into delirium tremens by drink and his comrades' cruel badinage. Other instances he knew of. A physician sent to him to examine a dog on behalf of his cook, whose fears caused sleeplessness; a coachman bitten in the groin by a mad greyhound at Shoreham, as reported some years since, has several lozenge-shaped blue-coloured scars to show, and is greatly excited when the topic is touched on. He cannot get rid of the fear. He would have no fear in sucking a wound from a dog, horse, or cat, and would resort to Turkish baths, acid injection, with a pipette or glass brush, of which he submitted samples, and moderate indulgence in alcoholic drinks, and would endeavour by pursuing other subjects more assiduously to forget the circumstance, and trust the result to one wiser than himself.

The Chairman said there seemed to be a variety of opinions as to the nature of the disease; few people had the hardihood to undertake the treatment of the disease so far as the dog was concerned. A horse could be managed, though they were sometimes savage. As to the treatment they did not even know what rabies was.

Mr. Howard had given a great deal of attention to rabies as a disease; he believed it was due to a specific animal poison passed into the blood, and that its period of latency entirely depended on the animal's strength. With a strong constitution the poison might be eliminated by the ordinary excretory organs, and no further ill effects happen. In other instances, when the general health was disturbed, it manifested itself by the irritant action of the blood on the nerve centres, particularly the medulla oblongata giving rise to the violent convulsions. As to treatment

he was convinced it had hitherto been on a wrong principle, the efforts made being to treat the symptoms and not the disease itself. Curara simply soothed the nervous system and paralysed the action of the nerve centres. He objected to such palliative measures. It had been his fortune to treat successfully a rabid dog some three years ago, when he devoted almost without intermission a whole week to the case. He wore a fencing costume and gloves, and made very free with a riding whip, to command the attention of his patient. The dog, howling incessantly, tore up the wooden floor, gnawing it and at the chain continually. The dog recovered, and was now alive, and the case had led him to believe that in the first stage the dog travels the streets biting others, go through the stages, and die, or recover. He treated with quinine and turpentine, anti-spasmodics, which, he held, acted specifically on the blood. He was induced to use quinine by reading of a case of anthrax in the human, which was treated successfully with it, although deemed hopeless. He gave it by main force, from the graduated measure; the quinine was given in two-grain doses one half hour, and the turpentine the next in five minim doses. There was no difficulty in swallowing, the less so because the case was not of the dumb kind. The whipping the dog did not seem to heed.

Mr. Moore, sen., said this was a very interesting case, but would only do for one possessed of the necessary courage, and he would not like to go through the ordeal. A great difficulty in treatment lay in the dog having often swallowed foreign substances and over-distended the stomach thereby; here he thought a cure was hopeless. He thought the erroneous ideas prevalent in the country should be combated, such as those put forward by Sir Thomas Watson, that there were more spontaneous cases than the inoculated cases. He believed dogs might be affected with rabies, communicate the disease, and yet recover. In the Stockport case, where the boy died in two months, it was shown the dog was still in good health. What had communicated hydrophobia to the boy here if not the rabid dog?

Mr. Fleming said his experience of the power of swallowing was different to Mr. Howard's. In all the cases he had seen there was more or less inability to swallow, that led him to doubt the nature of the case related. He believed almost everything had been tried with regard to the human subject, and yet the cases were fatal. Curara was a very dangerous agent, as it paralysed the muscles, and might be pushed too far; that the remedy in the hands of the veterinary surgeon would prove useless, inasmuch as the human and animal symptoms differed so widely; in the human subject there was a very distressing spasm of the muscles; in the dog, generally, there was paralysis at a very early stage, so they did not want agents to induce it. The use of the whip recalled to his mind the practice in the East of flogging the madmen there, believing the devil had got into him.

In his reply, *Mr. Steele* said his paper was intended more to

elicit opinions on important points than of opposing prevalent ideas. Mr. Howard, in his interesting case, had endorsed an opinion he had expressed in his paper, that in certain cases the poison might be thrown off; he based his opinion mainly on the fact that there were many animals supposed to have been mad that were now alive and well, yet they had communicated the disease. In his paper he had expressly suggested that more free use should be made of the system of treatment of rabies by agents acting on the excretory organs. They read of case after case of treatment in the human subject where specifics had been resorted to without regard to the endeavour to remove the poisonous matter. As far as he could learn from *post-mortem* examination and the microscrope, there was extravasation of blood in various parts, the characteristic lesions of rabies or hydrophobia seemed the collection of white corpuscles round the sheaths of the minute blood-vessels.

The meeting was then adjourned.

Present: thirteen fellows and one visitor.

JAMES ROWE, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above association was held at the Blackfriars' Hotel on Wednesday, March 13th, 1878. Mr. Tedbar Hopkins, president, in the chair. The following gentlemen were present:—Messrs. Peter Taylor, Thomas Taylor, Thomas Greaves, Alex. Lawson, W. A. Taylor, M. J. Roberts, and E. Faulkner, of Manchester; G. Heyes, R. Reynolds, and D. Hutcheon, of Liverpool; Carlingest, Witchurch, J. A. Polding, and T. Briggs, of Bury; W. Dacre, Altringham; W. Woods; Darwell, of Northwich; Brooks, Pilkington, T. S. Faulkner, of Rochdale; Hart, of Oldham; N. Fergusson, Warrington; Whittle, of Mosley; T. Horrocks, veterinary student, and the Secretary.

Several letters of excuse were read by the secretary, also one from Professor Walley, regretting his inability to attend the meeting in consequence of the approaching examinations, at the same time saying, "If you can arrange with the secretaries of the Liverpool and Midland Counties' Association, he would be pleased to read a paper on separate subjects to each about the middle of July." A vote of thanks was accorded Professor Walley for his kind offer, which was accepted.

The Secretary nominated Mr. Bernan Wood for election.

The Treasurer then read his report for the year 1877; he was pleased to say that the Society was in a flourishing condition as far as funds were concerned, he having in hand from £70 to £80; but at the same time he found that the expenses had lately exceeded

the income. To obviate this, Mr. Peter Taylor moved that at the next quarterly meeting he would propose that the annual subscription should be raised to £1, and also that a reporter should attend the meetings.

After an animated discussion respecting the "Fleming Testimonial Fund," *Mr. Woods*, of Wigan, proposed that Messrs. P. Taylor, Tom Taylor, John Lawson, W. Dacre, the president and secretary, be formed into a committee of management, and the matter left entirely in their hands, seconded by *W. A. Taylor* and carried unanimously.

Mr. Alex. Lawson proposed that W. Whittle, Esq., of Mosley, be nominated as member of council at the forthcoming election in May, seconded by *Mr. P. Taylor*, and carried.

Mr. P. Taylor proposed Messrs. W. A. Taylor, E. Faulkner, A. Lawson, W. Warr, the president and secretary, constitute the electioneering committee; seconded by *W. Wood* and carried.

Mr. Thomas Taylor then read a report of the microscopical examination of "Colloid Tumour," introduced at the last quarterly meeting by Mr. W. Dacre, the character of which produced a variety of opinions. Mr. Taylor said he was pleased to have the honour of reading microscopical examinations of the above tumour. From the extreme kindness of Dr. Dreschfield and Mr. Priestly, of Owen's College, Manchester, I am not only able, said Mr. Taylor, to give you a report, but also to show you sections of the tumour under the microscope. I must own to you that the study of this instrument has with me been but limited, but I trust that in bringing forward this, I may say the first attempt of introducing the microscope at our meetings, that it will not be the last, and that younger hands than mine and members who have more time on their hands may make use of this valuable instrument.

"Abdominal Tumours," small-celled sarcoma, probably lympho-sarcoma. Near the central parts of the nodules the lymphoid cells of the tumour have undergone colloid degeneration and disappeared.

Mr. Taylor also related a very interesting case of "Tumour in the left ventricle of the Brain." The subject was a bay carriage horse twelve years old, brought to Grosvenor Square on Friday afternoon, February 8th, 1878. The coachman in charge of the animal, said that for three or four days he had not taken his food at all well, and was very excited when both in and out of the stable, but that he did not think very much about it, as the animal had for a considerable time shown great uneasiness when being driven in harness, more particularly so when his feet came on to the stones from off the Macadam road; or if he stepped into water, he at once became very nervous and bad to manage. The present owner had had the horse for six years and the coachman had driven it four years; the excited appearance had commenced about ten months ago. I found, said Mr. Taylor, the pulse 60 and irritable; on the slightest noise being made he instantly became excited but soon settled down again. The iris

answered distinctly to the light, and with the exception of the visible mucous membranes being somewhat congested no other symptoms were present. On having him brought out of the loose box (in which he was standing on sawdust), the moment his feet touched the stones he was instantly excited, a quick tetanic spasm appeared at once to be produced. I allowed him to stand there a few minutes, and when he had become composed he would at intervals snap and bite at imaginary objects. When led on again the same nervous tremor would appear, but when allowed to rest it soon passed off, and his locomotive powers became perfect. I had him gently walked and trotted, and he appeared to go all right. On taking him back the same symptoms presented themselves; the excited manner, the nervous tremor, the snapping and biting. I had his shoes taken off, but without result. I own I was at a loss to say what my case might turn out to be; I knew full well I had a brain affection to deal with, but the snapping I did not at all like, and dreaded rabies, although the history of the case was such that I could not bring my mind to think so, especially as the coachman said the horse had never been bitten by a dog. I gave him 10 drams of Barb. aloes in solution, and applied cold applications to the head; cold bran tea was allowed, and he was kept very quiet in a roomy loose box. A glyster was given and he voided some soft fæces. Saturday morning I found my patient still in the same condition, he drank his bran tea, but his bowels were not acting. I continued the same treatment, but he gradually got worse. On Sunday morning he got down and was unable to rise; he tried all he could, and when he was raised he had not the power to stand; the excitement increased; if you even clapped your hands or shouted, the paroxysms increased in intensity, as also the snapping and biting; this continued until Monday evening, when the animal died. The *post-mortem* examination disclosed a beautiful tumour in the left ventricle of the brain, which I have the pleasure of showing you, also microscopical sections of the same, for which I am indebted to Dr. Dreschfield and Mr. Priestly, of Owen's College, who very kindly prepared them, and also gave me a report of the tumour. It seems it is of a very rare class, and receives the name of "Psammomum;" is situated in choroid plexus in left ventricle of the brain, is pear-shaped, and broad end forward; size $1\frac{7}{8}$ in., long, and $\frac{7}{8}$in. broad at broadest part, weight 9 grammes. Composed of calcareous nodules deposited in the vascular loops of choroid plexus and round them nucleated laminæ form; the rest of the tumour is composed of connective tissue, here and there degenerated blood pigment hæmatoidin is to be seen in granules. Mr. Taylor exhibited all these specimens under the microscope, which was very interesting and instructive, enabling the members to more easily understand the nature of the morbid specimens referred to.

The President then read a short paper on the "Antiseptic Treatment of Glanders," but the evening being so far advanced

the discussion was limited. At some future time, however, this most important subject will be brought forward for further consideration.

A vote of thanks to Mr. Taylor for his communication and the trouble he had taken in obtaining the physiological history and sections of the "Colloid Tumour and Cerebral Tumour" was proposed by *Mr. E. Faulkner*, and warmly seconded by *Mr. W. Dacre*, and carried unanimously.

A vote of thanks was accorded Dr. Dreschfield and Mr. Priestly for their kindness in assisting Mr. Taylor.

A vote of thanks to the President closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE usual quarterly meeting was held at the Queen's Hotel, Leeds, on Thursday, the 11th of April, the president, Mr. Fielding, in the chair. The following members were also present, viz. Messrs. James Freeman, T. Greaves, J. S. Carter, John Cuthbert, W. Edmundson, W. G. Schofield, Peter Walker, J. W. Anderton, Parlan Walker, J. M. Axe, B. W. Murdock, D. Spillman, W. Lodge, G. W. Carter, and the secretary.

Professor Axe, of the Royal Veterinary College, and Mr. Robertson, M.R.C.V.S., of Leeds, were present as visitors.

Apologies for non-attendance were received from Messrs. M. E. Naylor, E. C. Dray, John Fryer, J. Bale, Joseph and John Freeman, and J. E. Scriven.

The minutes of the previous meeting were read and confirmed.

Professor John Wortley Axe, of the Royal Veterinary College, London, was nominated for membership.

The President introduced the subject of the "Fleming Testimonial Fund." After a few remarks from Professor Axe in praise of the literary labours and the unwearied zeal of Mr. Fleming to enhance the status of the profession, it was unanimously resolved to form a committee to assist in carrying out the object of the fund, the committee to consist of the president and secretary, Messrs. Cuthbert, Axe, and W. G. Schofield.

The selection of a member for a seat in the council resulted in the election of Mr. James Freeman, of Hull, by a considerable majority of votes, and the secretary was instructed to take measures in order to secure his election in conjunction with the candidates selected by the Lancashire, Liverpool, and Midland Counties Associations.

Mr. T. Greaves then read a very able and interesting paper on "Germs," the part they play in the production of disease, also on "Disinfectants," and the part they play in the prevention and modifying of disease; the subject was well delineated and elicited much useful information.

Professor Axe said that of all subjects occupying the minds of scientific men, that of germs and germ-life were to the medical as well as to other scientific parties the most important at the present day. The first question to be asked is, "Do Germs exist; if they do what are they?" The idea that germs are existing facts, trembling on the border-land between living and non-living matter, must be accepted with very great care, and also with considerable doubt. The germs of disease cannot be recognised by the microscope, so that physically we cannot separate them. The fact of the existence of germs has been demonstrated by the virus of infection after being filtered through porcelain. The professor differed from the essayist respecting the similarity of septicæmia and pyæmia. Pyæmia arises from inflammatory actions taking place in the venous system, forming pus which is carried into the circulation, afterwards forming abcesses. Septicæmia is dependent on the introduction of a separate and distinct abnormal matter from pus into the system of the animal. *Disinfectants.*—Our first object is to know what action carbolic acid has upon the agents used along with it, as for instance, oil and spirits diminish its disinfectant action. The next question is, Does the same agent act upon all germs alike? Certainly not. Internal disinfection is of great importance in infectious diseases, though the subject yet requires much investigation; the utility of carbolic acid internally administered in cases of eczema epizootica had been very great in the experience of the professor. Other gentlemen having made a few remarks the discussion was brought to a close.

A cordial and unanimous vote of thanks was awarded to Mr. Greaves for his kindness in introducing the subject for discussion; a similar vote of thanks was accorded to Professor Axe for giving the members the result of his experience in the discussion.

It was unanimously resolved to invite Professor Walley to read a paper for discussion at the July meeting.

Wm. Broughton, *Hon. Sec.*

THE SPRING EXAMINATION OF THE STUDENTS OF THE ROYAL VETERINARY COLLEGE.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing April 1st, the following students from the Royal Veterinary College received their diplomas, and were admitted members of the profession:

Mr. Walter Barron Hart . .	London.
— Edward Miles Perry . .	New Bedford, Massachusetts, U.S.

Mr. Richard Page Bull . .	Tysoe, Warwickshire.
— William Stanly Carless .	Hoveringham, Notts.
— George Wartnaby . .	Foremack Farm, nr. Derby.
— John Joseph Burchnall .	Stamford, Leicestershire.
— William Alfred South .	London.
— Sidney Sturgess .	Ashby-de-la-Zouch, Leicestershire.
— William Edward White .	Sheffield.
— John Richard Carless .	Stoke-on-Trent.
— William Ashton Hancock	Uxbridge, Middlesex.
— James Broad, junr. .	London.
— Frederic William Day .	Alderton, Gloucestershire.
— Edward Lyne Dixson .	Margate.
— James Gifford Stephens .	Tockington, Gloucestershire.
— Charles Comber Hoadley.	London.

Mr. William Ashton Hancock was distinguished by passing with VERY GREAT CREDIT; and Mr. Edward Miles Perry and Mr. James Broad, junr., with GREAT CREDIT.

The following Students of the Royal Veterinary College passed their SECOND EXAMINATION at the meetings of the Court of Examiners on April 4th and 5th:

Mr. James Mills.	Mr. James Blakeway.
— Frederick Leigh Slater.	— Titus Littler.
— Kirtlan Smith.	— Henry Shaw.
— Edward Simpson Shave.	— Wm. Henry McCaldon.
— John Davies Thomas.	— William Robert Emery.
— Joseph Bainbridge.	— William Alston Edgar.
— William Frank Smith.	— Chas. Hedworth Golledge.

Mr. Arthur Cox.

The following Students passed their FIRST EXAMINATION on April 6th and 8th:

Mr. Chas. Henry Smyth Neate.	Mr. George Gartside Mayor.
— Henry James Kelly.	— Chas. St. Lo. Wilkinson.
— Samuel Benjamin Draper.	— Walter Jas. Page Palmer.
— Walter William Gulleford.	— Edward Slipper.

EXAMINATIONS OF THE MONTREAL VETERINARY COLLEGE.

THE annual examinations of this College were concluded on Thursday, March 28th. The examinations in French were conducted by Professors D'Orsonnens and Bibaud, of Laval University, and Couture and Bruneau, lecturers of the Veterinary College. The English written examinations were conducted by Professors Dawson, Craik, and Osler, of McGill University, and McEachran, Bruneau, and Lyford, of the Veterinary College; the final oral tests by the following board

appointed by the Council of Agriculture:—Alex. Waddell, M.R.C.V.S., Quebec; Williamson Bryden, V.S., Boston, Mass.; Charles Levesque, V.S., Berthier en haut; Arch. McCormack, V.S., Beauharnois; Dr. Geo. Leclerc and C. J. Alloway, V.S., Montreal.

The following French-Canadian students were successful in passing Botany, by Professor Brosseau:—H. Audrain, Montreal; H. C. D'Aubigny, H. Bergerin, Beauharnois; J. Page, Lothiniere; H. Jollicœur, Montreal.

Chemistry, by Prof. D'Orsennens:—H. Audrain, A. Levesque, H. Bergerin, and H. C. D'Aubigny.

Physiology, by Prof. Bibaud:—H. Audrain, A. Levesque, H. Bergerin, and H. C. D'Aubigny.

IN THE ENGLISH DEPARTMENT.

Botany, by Prof. Dawson:—Noah Cressy, M.D., Amherst, Mass.; George Parkinson, Bridgeport, Conn., U.S.; William Jakeman, Boston, Mass.; Matthias S. Brown, Montreal: P. Cummins, Quebec; E. White, Montreal; Alex. Harris, Ottawa.

Chemistry, by Prof. Craik:—Noah Cressy, M.D., J. J. Miles, Charlestown, Ill., U.S.; Daniel Lemay, Bord-a-Plouff, P.Q.; H. J. McMartin, Montreal; Charles Winslow, Rockland, Mass., U.S.

Physiology, by Prof. W. Osler:—Noah Cressy, M.D., J. J. Miles, D. Lemay, H. J. McMartin.

Materia Medica by Prof. Brunea:—Noah Cressy, M.D., J. J. Miles.

The following prizes were awarded:—For the best general examination on all subjects—first, F. W. McLellan, silver medal, the gift of the Council of Agriculture; second, Noah Cressy, M.D., urinometer and clinical thermometer. In the Junior Class—First, J. J. Miles; second, D. Lemay. A special prize of a clinical thermometer was awarded to Mr. F. W. McLellan for proficiency in practical anatomy. The diplomas of the College were conferred on Fred. W. McLellan, Bridgeport, Conn., U.S., and Noah Cressy, M.D., Amherst, Mass., U.S.

The following were present:—Professors Craik and Osler, of McGill University, and McEachran, Bruneau, Couture, and Lyford, of the Veterinary College. Letters of apology were received from Prof. Dawson, L. H. Massue, Esq., President of the Council of Agriculture, J. M. Browning, Esq., and others, regretting their inability to be present.

Dr. Leclerc, Secretary of the Council of Agriculture, in presenting the diplomas, said that he had marked with pleasure the progress of the College from its commencement, and year by year he found that not only did the number of graduates increase, but (he meant no disparagement to former pupils) he could not help noticing a decided improvement in the preliminary education of the students, and he had no doubt that the course followed by the school in making veterinary education thoroughly

scientific, would have a marked influence on the profession. He could also say with pleasure that the reports of the committees of the Council, appointed from time to time to visit the school, were always not only highly satisfactory, but were very complimentary to the teachers. He felt confident that the gentlemen who this day received diplomas would be a credit to the Alma Mater. He would, however, remind them that the battle of life was yet before them; they had begun well, and he wished that continued success might attend them.

The prizes were distributed by Mr. Bryden, V.S., Boston, who took occasion to pay a high compliment to the successful competitors, and remarked that New England ought to be proud of having two such scientific gentlemen as Dr. Cressy and Mr. McLellan have this day proved themselves to be, and he felt confident that they would not only attain to high positions in their profession, but would reflect great honour on the Montreal Veterinary College. Prof. McEachran expressed the great satisfaction which he enjoyed at the progress made during the session now closed, by every student in the College, and complimented them on their diligence and their exemplary conduct both in and out of the College; in doing so he expressed not only his own opinion but also that of his confrères, and the professors of McGill and Laval Universities with whom they came in contact. He felt proud to claim as pupils the two gentlemen who had now received their diplomas. Mr. Alloway, V.S., as one of the examiners expressed his high appreciation of the scientific attainments of the graduates. The President presented Messrs. Cressy and McLellan with the diplomas of the Montreal Veterinary Medical Association, and while referring to the valuable services rendered by both to the Association, he hoped that they would still continue active members, and annually contribute papers to the advancement of veterinary science.

Veterinary Jurisprudence.

IMPERFECT ACTION AND VICE.

An Important Horse Case.

At the Truro County Court, on Friday, February 15th, before Mr. Montagu Bere, judge. Mr. F. H. Cock, town clerk of Truro, *v.* the Rev. F. Attwood, of St. Mark's, Torquay.

Mr. Marrack appeared for the plaintiff; and Mr. Baker, of Torquay, for the defendant.

Mr. Marrack said this was an action to recover the sum of £50, for a breach of warranty in the sale of a horse. In the month of November last the plaintiff's attention was called to an advertisement which appeared in the *Western Morning News*, to the effect:—"For sale, a handsome bay gelding, 15.2, rising six, no vice, sound, good in harness

or saddle.—Apply Rev. F. Attwood, Stokeleigh, Torquay." On the 18th November Mr. Cosk wrote to the advertiser asking whether the bay gelding had been driven in double harness, whether he would warrant him perfectly sound and free from vice, and what was the price. To that letter Mr. Cock received a long and explicit reply, but the letter was not forthcoming, for reasons which he would state. Mr. Cock wrote again to the defendant, thanking him for his very explicit reply, and said he would try to go up to see him on Tuesday, or, if not, he would send a veterinary surgeon. Mr. Cock was not able to go himself, and he sent for Mr. Olver, who could not go to Torquay, unless at great inconvenience, and he recommended Mr. Cock to write to Mr. Williams, a veterinary surgeon at Newton Abbot. Mr. Cock accordingly wrote to Williams, and forwarded to him the letter which he had received from the defendant about the horse. Mr. Williams examined the horse, and reported favorably; but when Mr. Cock subsequently wrote to Mr. Williams, and asked him to return the defendant's letter, he coolly replied that he had destroyed it. After some further correspondence, Mr. Cock sent a cheque for £65, the price of the horse, on the understanding that defendant would free him to Perranwell station. On receiving the cheque the defendant sent a receipt and a warranty to this effect:—"Received from Mr. Cock the sum of £65, value of a bay gelding, five years old, warranted quiet to ride and drive, and examined and passed as perfectly sound by his veterinary surgeon, Mr. Williams, of Newton Abbot."

The horse arrived at Perranwell on the 22nd November. On the 24th the horse was driven by Mr. Cock to Truro, and he would tell the court how the horse was then, and how it showed an utter want of power to ascend rising ground, and if they attempted to whip him, he immediately showed signs of kicking. The second time Mr. Cock drove him to Truro, the coachman, on taking him back, touched him with the whip, and he kicked so violently as to break both shafts of the carriage. Mr. Cock then wrote to the defendant complaining that he had sold him a kicker, and that the horse in no way bore out the report he gave of it; that it had great difficulty in getting up hills; that it could not stand properly on its hind feet, but rested on its toes, and he therefore requested the defendant to take it back. The defendant replied that he was much astonished at this "preposterous request," which he certainly could not comply with, and said he had given a perfectly true report of the horse, and that it had never flinched with him in getting up hills. Mr. Cock had the horse examined by Mr. Olver, and Mr. Burton came down from Torquay and examined it for the defendant, and after remaining at livery for some time at the Royal Hotel stables, it was sold by auction for £16.

Mr. Cock was called, and deposed to the facts stated by Mr. Marrack The defendant, in his letter giving a glowing description of the horse, answered all the points in the affirmative as to whether it was sound and free from vice, good tempered, &c., and said that it had been in the habit of taking a Victoria up the hills in the neighbourhood with the greatest ease. The defendant concluded the letter by saying that he was quite prepared to give a warranty, but presumed that he (Mr. Cock) was aware that such a thing would not hold good in a court of law. The defendant also added that he should be happy to have any veterinary surgeon to inspect him, but he had no faith in a single member of that profession. When he (plaintiff) first saw the horse, which was not till the Sunday morning, he at once saw that he stood on his toes with the hind feet. When he drove the horse to Truro it went fairly well on the

level road, but on going up hill it wanted to stop every now and then, and if touched with the whip it showed signs of kicking. The horse had a jerking motion behind in going down hill, and showed a great want of power. The second time he drove the horse the symptoms were worse.

Mr. Cock was cross-examined by Mr. Baker, but his evidence was not shaken.

Joseph Thomas, Mr. Cock's groom, deposed that he took the horse out of the railway truck at Parranwell station, and he at once noticed that it did not put its hind heels to the ground, and he had a difficulty in turning.

Mr. H. Blamey, a coal merchant, residing at Perranwell, said he happened to be at Perranwell station when the horse was being taken out of the truck, and he assisted the coachman in getting him out. The horse did not walk out, but hopped on his toes, and there was a thick heel on the shoe.

Nathaniel Davey, station-master at Perranwell, said he noticed at once, when the horse came out of the box, that the horse was crippled. Anybody could have seen it. He looked at the box to see if the horse had been kicking, but there were no marks whatever on the box.

Mr. Thomas Olver, veterinary surgeon, said Mr. Cock had shown him the letter of defendant which had been referred to. It was a "glorified" description of a horse, and he told Mr. Cock so. It was a very much better description than he could write. In fact, he never saw a horse that he could write such a description of. It represented the horse as most perfect, quiet, free from vice, particularly handsome, and sound in every respect. The letter also stated that warranty was not of much value in courts of law, and the writer appeared to hold a very poor opinion of witness's profession as a body. (Laughter.) He had examined the horse at the Royal Hotel stables, and tried it in a trap. He took it up Pydar Street, and found it had great difficulty in pulling the trap up the hill, so much so that it attempted to stop every now and then. Directly the man struck it with the whip it showed symptoms that it was about to kick, and he told the man to put away the whip. The horse went very well on level ground. On going down hill it had no power of keeping back the trap. It was partially paralysed behind, and had lost power. The hind foot was greatly contracted, and very narrow. The horse was quite unsound, and was certainly not quiet in harness.

His Honour.—How long would the paralysis be in existence?

Mr. Olver.—Well, I should say months.

In continuing his chief examination, Mr. Olver said he was with Mr. Burton when he examined and tried the horse. They went up Pydar Street again, and the horse showed the same symptoms of weakness when half way up the hill. The man struck the horse gently with the whip, and it kicked at once, so much so that Mr. Burton, who was sitting in front of the trap, felt himself in rather a dangerous position, and he thought it advisable to get out in coming down the hill.

In cross-examination, Mr. Olver said he had formed no opinion as to the cause of the paralysis. If a horse met with an accident which would produce such an effect, he would show shortly afterwards symptoms of illness and loss of appetite.

Samuel Keast, horse trainer, in the service of Mr. Olver, fully corroborated the evidence Mr. Olver had given.

For the defence, *Mr. Baker* stated that his client considered it to be his bounded duty to come into court to show that he had acted as one gentleman should do to another in the course of this transaction. He had no reason to complain of the manner in which the action had been

conducted, but he did complain of some of the expressions used in the correspondence which had passed, notably one remark that "the defect was not only of very long standing, but one which must have been known to the defendant." He pointed out that there were two points in the case. One, as to whether there was a warranty; and the second, whether, in case of the existence of a warranty, up to what time did it cover. There was no written warranty in existence, and he denied any verbal expression to that effect, but Mr. Cock himself sent a veterinary surgeon, named Williams, to examine the horse, and that party rode and drove it, and found it, to all appearances, perfectly sound. As to the time any warranty covered, he argued that it ceased after the completion of the purchase and upon the transfer of the animal from one party to the other.

The first witness called was the *Rev. Francis John Attwood*, who said he was now morning preacher at St. Mark's, Torquay, but formerly vicar of Norton, near Gloucester. In November he was the owner of a bay gelding, which he bought of a Mr. Bradley, of Gloucester, in February, 1877, for 80 guineas. The animal was examined by Mr. Vick, veterinary surgeon, of Gloucester. He used to drive out in a Victoria nearly every day. Never found the horse to flinch, and he was very quiet to ride and drive. He had endeavoured to sell the horse at Gloucester, as he was going to keep ponies instead. It was not sold. One gentleman would have given the price asked for it (80 guineas), had it been a match for another he had at home. On coming to Torquay he received a letter from Mr. Cock. In answer to the letter which asked for a warranty, he stated, as near as he could recollect, "As a rule I never either give or ask for a warranty. I prefer a veterinary examination, but experience has taught me that these are not always to be depended upon, as they are not all proof against bribery and corruption." He believed those were his identical words. Mr. Cock wrote, in answer, that he would send a veterinary surgeon, which he did. Mr. Williams came on the 14th November, examined and tried the horse, and expressed himself well pleased with it. Forgot whether he (defendant) used the horse after he received Mr. Cock's letter, but was certain he never used it after he had the money. Told Mr. Williams that he would not be responsible for the animal after he had left his (defendant's) stables. The 30th November was the date when he received the first communication with regard to the horse's unsoundness.

By Mr. Marrack.—Did not generally keep copies of letters, but kept copy of the last letter, because he thought from its tone it would lead to litigation. Horse was perfectly sound when it left his care. Must have had some injury afterwards.

Charles Bradley, salt merchant, Gloucester, said he sold the bay gelding to Mr. Attwood for eighty guineas. Horse had rather upright feet, but that would not interfere with its usefulness. Was perfectly sound when in his possession. Had bought him that day for twenty-five guineas.

Henry Sims, late coachman to Mr. Attwood, said—Never knew him to kick or show any vice, and never noticed any defect in him.

Thomas Short, blacksmith, Torquay, said he used to shoe the horse. Never had any particular instructions as to doing it. On a shoe being produced, which was worn very thinly at the toe, and scarcely anything at the heel, he gave as his opinion that there was nothing peculiar in it, and it might be worn in a similar manner by an ordinary horse.

Mr. A. J. Williams said he was a veterinary surgeon, practising at Newton Abbot. In consequence of a letter from Mr. Cock, he went to Mr. Attwood's, at Torquay. Mr. Cock sent him a letter written by Mr.

Attwood. He read it, and kept it untill the 11th December, when he burnt it. He received a telegram from Mr. Cock the day after.

In answer to his Honour.—I did not send it back to Mr. Cock, because he had not asked for it.

Examination continued—As well as he could recollect, there was no warranty contained in the letter. He examined Mr. Attwood's horse thoroughly, and found it, as far as he could observe, perfectly sound. Sent a man called Pigeon for the horse, and had it taken to the Globe Hotel stables, at Newton Abbot, where it was kept for the night. The next morning it was sent off by train. He did not go to the station to see the horse sent off. He examined the horse since he came to Truro, and found him suffering from an injury to the back—in the lumbar muscles and the nerves. It might have arisen while the horse was in his stall, or in the course of its conveyance by train. Would undertake to say that the injury was not in existence when the horse was at Torquay.

Samuel Burton, veterinary surgeon, Torquay, said he was employed to come to Truro to see the horse. In his opinion, it was suffering from injury to the spine. It was quite possible the injury might have arisen in the stable. Did not think it was of long standing. Might have occurred within 24, or even 12 hours. Did not see anything very peculiar about the shoe produced.

John Vick, veterinary surgeon, Gloucester, had known the horse from a colt. Had examined him while in Mr. Bradley's possession, and when Mr. Attwood was the owner, and found him perfectly sound. The feet were rather peculiarly shaped, small, and very upright. It was, however, a perfectly natural formation, and did not interfere with the use of the animal. Had seen the horse at Truro, and found it to be suffering from a disease like that described by Mr. Burton and Mr. Williams. When a horse naturally trod on its toes, it would wear the shoe as produced.

His Honour said he should reserve judgment.

At the sitting of the Truro County Court, on Friday, March 15th, his Honour, Mr. Montagu Bere, Q.C., judge, gave judgment in the case.

After an exhaustive review of the evidence, *his Honour* concluded by remarking that on the view of the whole of this case, and comparing the two sets of witnesses, their assertions and their demeanour in the witness-box, he had come to the conclusion that the horse was unsound when sold to plaintiff, and that a verdict must be entered for the plaintiff, with cost.—*The West Briton.*

CLAIM AGAINST A VETERINARY SURGEON FOR LOSS OF A DOG.—BRISTOL COUNTY COURT.

Before Mr. R. A. Fisher, Judge.

Anderson *v.* Gregory.

Mr. Norris appeared for the plaintiff, and Mr. Thick for the defendant.

Mr. Norris said in this case the plaintiff was Mr. John Aldridge Anderson and the defendant Mr. Charles William Gregory, and the action was brought to recover the sum of £50, the value of a dog. Mr. Anderson was a gentleman living at Keynsham, and had several dogs. In December last he had a very valuable Scotch collie called "Glen." The dog's health was not quite perfect, suffering as it was somewnat

from a cold, and it was taken to Mr. Gregory, who kept an infirmary for dogs and horses, and he professed to treat them very kindly and liberally, which he (Mr. Norris) believed he did. But Mr. Gregory having had "Glen" in his possession, allowed it to be lost, stolen, or to stray. Some correspondence took place between Mr. Clifton, acting for Mr. Anderson in the matter, and Mr. Gregory, and, as his Honour would hear, he had paid £10 into court, with proportionate costs. Calling attention to the correspondence, the learned counsel said that on the 28th December Mr. Clifton wrote to the defendant, telling him that he had been consulted by Mr. Anderson, whose dog had been lost from his establishment. The dog had evidently been lost owing to his negligence, and his client had suffered much loss in consequence. The dog was a valuable one. and had won several prizes, and it was also used for stud purposes, Mr, Anderson having lost a considerable amount in fees since he (Mr. Gregory) took the dog under his care. Unless his client's claim was met he would be obliged to have recourse to legal measures.

In answer to one of his (Mr. Clifton's) letters, Mr. Thick (defendant's solicitor) wrote, saying that £10 and costs, £2 6s. 6d., had been paid "into court, without prejudice, in settlement of the action." Mr. Clifton, in reply, wrote, saying that the sum paid into court was wholly inadequate, some of the best judges in the country having valued the dog at £30 or more. Mr. Norris went on to say that the dog took a second prize at the Bristol and Clifton Dog Show, a second at the Cheltenham show, was very highly commended at the Darlington, Cirencester, Swansea, and Llanelly shows, and highly commended last year at the Grand National Dog Show at Birmingham.

Mr. Anderson, the plaintiff, was called, and corroborated the statements made in the opening. He said he valued the dog at £25 after the Birmingham show.

By *Mr. Thick:* The price put on the dog at the Bristol show was £20, and at the Birmingham show he affixed the same price.

By *Mr. Norris:* The value of the dog was enhanced £5 by its having been highly commended at the Birmingham show.

Rev. Grenville Hodgson said he was a judge of dogs, and had acted in that capacity at the Crystal Palace and other shows at home, and also many shows abroad. He knew the dog "Glen," and judged him at the last Bristol show, and in his opinion the dog was worth £25.

By *Mr. Thick:* When he judged the dog at this price he did not know what price Mr. Anderson had put on it.

Mr. Thick, for the defence, said it was perfectly true Mr. Gregory had the care of this dog entrusted to him, and he thought he should satisfy his Honour that he took fair and reasonable care of it.

His Honour: The question before me is as to the amount to be recovered.

Mr. Thick said the defendant had paid £10 into court, which he considered to be the value of the dog. The dog was ill when it was taken to Mr. Gregory, and that would deteriorate its value to the extent of £10.

Mr. Gregory, the defendant, said he kept an infirmary for dogs and horses in connection with his establishment. When brought to him the dog was suffering from bronchitis, and the illness was likely to affect its health materially in the future. He put the dog in a suitable place, and chained it to a kennel. There was some congestion of the lungs.

By *his Honour:* When he found the dog missing he sent round to the various police stations, and had bills issued offering a reward of £4 for its recovery.

Mr. Cade, veterinary surgeon, said he saw the dog in company with the owner at the Bristol show. He did not then think it worth more than £10. Assuming the dog to be worth £20, it would have deteriorated in value as the result of its illness.

In answer to his Honour, *Mr. Cade* said he saw the price of the dog affixed above its stall at the show.

Mr. Jermyn, also veterinary surgeon, practising at Bristol, said he saw the dog at the show, but paid no attention to the value of it. He saw the price of it in the catalogue.

Rev. G. Hodgson, recalled, said he saw no price placed above the dog at the Bristol show. The price was only affixed in that way when the figure had been reduced from what appeared in the catalogue.

Mr. Anderson, recalled, said it was not true that there was any ticket over the dog except the one showing that it had obtained the second prize.

Mr. Norris having replied upon the case,

His Honour said the value put upon the dog by Mr. Anderson at the Bristol show was £20. Mr. Hodgson looked at the dog, and came to the conclusion that it was worth £25, but he did not think he could give a verdict for that sum. He could, however, after hearing the evidence, fairly and reasonably give a verdict for £20. His Honour granted costs on the higher scale.—*Western Daily Express.*

THE FITZWYGRAM PRIZE COMPETITION.

This prize competition is open to students of the Veterinary Schools in this country, and also to graduates of the Royal College of Veterinary Surgeons who have obtained their diploma since the previous competition.

The prizes are three in number. The first is of the value of £50; the second £30; the third £20.

The competition will take place next June. It will consist—first, of a written; and second, of a practical and *vivâ voce* examination on subjects pertaining to veterinary science.

1200 marks will be assigned to the first part, and 600 marks to the second part.

In the first part the marks will be assigned as under:

Anatomy, 300; Physiology, 300; Pathology, 300; Chemistry, 150; Botany and Materia Medica, 150.

In the second part as under:

Diagnosis of Disease, 200; Shoeing, 100; Examination for Soundness, 200; Selection of Horses for Specific Purposes, 100.

A competitor failing to obtain *half the number* of marks assigned to any of the papers in the written examination will be excluded from the second or *vivâ voce* examination.

The examination papers, with number cards and blank sheets or books for the competitors to write upon, will be forwarded under cover to the superintendents or other appointed persons, so as to be received by them as near the day fixed for the examination as possible.

Writing materials for each competitor will be provided, and all arrangements for the accommodation of the competitors completed before the hour fixed for opening the envelope containing the questions.

* Competitors should be in their places at the time appointed; no extra time will be allowed to competitors who come in late; they will, however, be allowed to take their place if they come in before any one has left the room.

* The numbered envelope containing the questions of the series to be answered (No. 1, 2, or 3, &c.) must be opened at the hour fixed by the superintendent, in the presence of the competitors. A copy of the questions will be given to each competitor, with a card, on which is a number; this number is that which the competitor will bear during the examination, and on each paper or book given him to write his answers he must insert this number at the right-hand upper corner, for the purpose of final identification. No examination paper shall be taken from the room until the examination is complete.

The superintendent or other person appointed must carefully watch the whole examination, and guard against the competitors using unfair means, such as resorting to books or notes. No person except the superintendent should be permitted to be present, and competitors should on no consideration be allowed to speak to each other after the copies of questions have been distributed.

* At the expiration of the period fixed for answering the questions, writing will at once cease, when the written papers must be signed at the end by the superintendent, as a guarantee that they were written by the gentlemen whose numbers they bear; he then collects them and the tickets, and when the examinations are finally concluded, encloses them in a sealed envelope, and forwards them by the earliest opportunity to the address indicated below, along with the declaration duly filled in and signed. If no clock is in the room, the superintendent is to announce the expiration of each hour.

The superintendent enters in a book the name of each competitor, for verification, as well as the number on the ticket he has given him. The name and number are not revealed until the examiners have awarded the marks to each subject.

N.B.—The paragraphs marked * should be read aloud to the competitors before commencing their writing.

Competitors are prohibited, *under pain of instant dismissal*, from introducing any book, manuscript, or references of any kind, into the examination-room, from communicating with or copying from each other, and from communicating with any person outside the examination room. Every competitor is desired to write his number *very distinctly* at the top of the first page of each of his answer books, and is warned that if any portion of his answers be left upon *separate* leaves, they may not improbably be

lost. *Answers to be written on only one side of the paper*, and each answer to be marked on the *left-hand margin*, with a number corresponding to that of the question.

The names of intending competitors are to be forwarded to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, at least one week before the date of competition.

The exact date will be notified in sufficient time.

The first portion of the examination will take place in London for the Royal Veterinary College, and in Edinburgh for the Scotch Schools, and in either London or Edinburgh, as may best suit the convenience of those who have obtained the diploma.

The five best competitors in the first or written examination will be selected for further competition in the practical or *vivâ voce* test.

This further competition will be held in Edinburgh this year.

The donor will give an allowance of £4, for travelling and other expenses, to each selected competitor proceeding from London to Edinburgh for the second part of the competition.

THE PROPOSED AGRICULTURAL EXHIBITION.

A MEETING of the Executive Committee, appointed to promote the holding of a great Agricultural Exhibition in London next year under the auspices of the Royal Agricultural Society of England, was held at the Mansion House, on Monday, April 15th. Alderman Sir Charles Whetham, in whose mayoralty the show will be held, being in the chair. There were also present Colonel Kingscote, C.B., M.P., president of the Royal Agricultural Society, Lord Richard Grosvenor, M.P., Lord Reay, Sir J. Heron Maxwell, Sir Thomas White, the Rev. W. Rogers, Mr. Gilbey, and others.

Mr. Jenkins, the secretary of the Agricultural Society, reported that the Sites Committee of that body had been viewing many suggested places for the holding of the Exhibition in and near the metropolis, and that the society had every reason to think that by the next meeting of the Mansion House Committee a highly convenient and easily accessible site of nearly 100 acres in the West of London would have been selected and rented for the purposes of the show. The site having once been obtained, the society had no doubt that a large, interesting, and important exhibition of agricultural stock, produce, and implements from all parts of the kingdom, and possibly from abroad, would be gathered together. The Prince of Wales has accepted the presidency of the Society during the year of the show, and the Queen has subscribed 100 guineas towards the Mansion House Fund. As in the provinces in past years, the Royal Agricultural Society was disposed to contribute very largely towards the cost of the exhibition; but there were certain expensive items, such as the renting of the site and the

offering of special prizes for stock and implements, of which the city or town in which the show was held usually undertook to bear the cost. Replying to the chairman, Mr. Jenkins stated that about £20,000 would, he thought be required for the purposes of the London Exhibition.

Col. Kingscote, M.P., said the Liverpool people last year were exceedingly liberal, and contributed £7000 towards the expenses of the show, which was naturally on a much smaller scale.

Sir Charles Whetham said he had every hope that when once the site was settled the public would largely subscribe, and especially the tradespeople, whom the show would considerably benefit. About £2500 was reported to have been promised to the Mansion House Fund, including, among later contributions, from the Marquis of Salisbury, £50; Earl Cadogan, £50; the Earl of Ellesmere, £50; the Duke of Sutherland, £20; the Aylesbury Dairy Company, £25; Mr. Thomas Brassey, M.P., £50; Mr. Odams, £52 10s. The names of the chairman and deputy chairman of the South Eastern, Brighton, and South Western Railway Companies were added to the committee, and the meeting then adjourned until Monday, the 8th of May.

THE CONTAGIOUS DISEASES (ANIMALS) BILL.

A MEETING of delegates connected with the Lancashire and Yorkshire Union of the Foreign Cattle Trade Association was held at Leeds on Monday, April 15th., when resolutions were passed strongly condemning the Duke of Richmond and Gordon's Contagious Diseases (Animals) Bill, and appointing representatives from the different districts to attend in London when the Bill comes before the House of Commons, in order to influence members of Parliament to do their utmost to secure the rejection of the measure. It was stated that if the Bill passed, the price of meat would be increased 1d. and 1½d. per lb.

PARLIAMENTARY INTELLIGENCE.

THE CONTAGIOUS DISEASES (ANIMALS) BILL.

HOUSE OF COMMONS.—*April 15th.*

Mr. Chaplin asked the Chancellor of the Exchequer if he could inform the House when the Contagious Diseases (Animals) Bill might be expected to come down to the House from the House of Lords; whether the Government would be able to give it precedence over other Government business as soon as it did so; and whether he would be able to give it at least equal advantages with the County Court Bill. (Hear, hear.)

The *Chancellor of the Exchequer* said he understood that the Bill stood for Committee in the House of Lords for Thursday, May 16. When it came down, of course the Government would be anxious to deal with it as well as they could, having regard to other business: but the Bill, having passed the House of Lords, would not require to be proceeded with quite so early as Bills which had to be elaborated in the House of Commons.

Mr. Forster asked if the evidence taken before a Committee of the House of Lords on the Bill could be printed by the time the Bill came before the House, as it would be a great convenience.

The *Chancellor of the Exchequer* said he had no doubt this could be done, and he would ascertain the proper course to take.

THE FLEMING TESTIMONIAL FUND.

To the Editors of the 'Veterinarian.'

Gentlemen,—I am reluctantly compelled to ask you to grant me a little of your space to explain away a false impression that has arisen anent the "origin" and "management" of the above movement.

Several letters have been addressed to Mr. Rowe, Hon. Sec., under the impression that he was acting for the Central Veterinary Medical Society, and that the movement emanated from them. Now, I wish this erroneous impression to be permanently removed—for reasons which other Medical Associations will easily apprehend, therefore I need not enter upon them.

The subject was mooted some two or three years ago, when Mr. Roalfe Cox, and our late lamented and highly esteemed friend Mr. Field, were entrusted with its management. To bring the subject prominently forward by placing it in such able hands, the "Testimonial" must have been a great success. But Providence removed Mr. Field from amongst us in the prime of life and zenith of usefulness, and the first-named useful advocate has been so unwell that it has been a severe trial for him to attend his important professional duties—hence the business relapsed into abeyance, until I thought my leisure could not be better employed than by pushing the work they had already begun, into life and working order. I therefore consulted Mr. Cox, and with his sanction put the ball in motion, taking up the running where he ceased. I solicited the assistance of members of council, professors and others, to form a provisional committee, which committee was formed with the President of the Royal College of Veterinary Surgeons, Major General Sir F. Fitzwygram, as chairman; power was reserved to add to the committee, and I am pleased to know that many additional names have been sent in, and I trust that all our veterinary medical associations will work with the general committee (as I feel sure they will), so that by their united efforts we shall realise a great success, and make the

testimonial worthy of the man—thereby recognising honest worth whilst in the quick. Let us remember Aristides :—

"Uri tenim fulgore suo, qui prægravat artes infra se positas ;—extinctus amabitur idem."

Or thus :—

For he, who soars to an unusual height,
Oppressive dazzles with excess of light ;
The Arts beneath him : yet, when dead, shall prove
An object worthy of esteem and love.

I am, gentlemen, your obedient servant,
ROBERT WARD, F.R.C.V.S., Treasurer.

LETTER FROM MR. BEDDARD,

with reference to Mr. HILL's remarks on the "Duties of Veterinary Inspectors," at the meeting of the Lancashire Veterinary Medical Association.

IN your March issue of the report of the "Lancashire Veterinary Medical Association," Mr. Hill, of Wolverhampton, made the following remarks during the discussion on the duties, &c., of Veterinary Inspectors :—"A cow was slaughtered and afterwards the surgeon found a piece of wire protruding into the diaphragm which no doubt had been there a long time as there was no inflammation ; the person on finding the wire said he (the speaker) had erred in his opinion, and he was told he would have to pay for the cow. The lungs were taken to another veterinary surgeon who confirmed his opinion, but the gentleman he had mentioned would not give way, and the end of it was he had to pay £25, as damages for the cow which belonged to the Corporation."

Each of these statements I positively deny. Mr. Hill first pronounced the disease to be pleuro-pneumonia, I made the same mistake and had the beast slaughtered. The following morning, Mr. Hill wished me to report the case as pleuro-pneumonia and after seeing the lungs, he still maintained there were indications of the disease. To settle the question the lungs were examined by a third veterinary surgeon, and upon his deciding that there were no indications whatever of the malady, I declined reporting the case as such. The matter was taken in hand by our town clerk on behalf of the Corporation, and the county paid to the Corporation compensation to the amount of £7 10*s.* in addition to what the carcase realised to the butcher.

You will see from the above :—*First.* I did not tell Mr. Hill he had erred, or that he would have to pay.

Secondly. The veterinary surgeon who examined the lungs did not confirm his opinion, but mine.

Thirdly. That he did not pay £25 as damages ; but that the county paid £7 10*s.*

PRESENTATION TO MR. KIDD, V.S.

We have been requested to give insertion to the following report in our present number:

"On Tuesday, April 16th, Mr. Kidd, V.S., Inverness, who has received a professional appointment in the South, was presented, within the Caledonian Hotel, with a testimonial expressive of the general esteem in which he has been held during his six years' residence in the North. The testimonial consisted of a handsome gold watch and case, and was presented to Mr. Kidd, on behalf of the subscribers, by Mr. Mollison Dochfour, who very cordially bore testimony to Mr. Kidd's popularity in the county, his medical experience and attention, and to the excellent manner in which he had performed his professional services in their midst. On behalf of many friends, Mr. Mollison heartily wished him long life, happiness, and success in the new sphere on which he was about to enter. Mr. Kidd briefly acknowledged the compliment, stating that he would long remember the kindness and courtesy accorded to him by his numerous friends in the town and county of Inverness. Mr. Elliot, Inverness, who occupied the chair; Mr. Cran, Kirkton; Mr. Macbean, Cradlehall; Mr. Chisholm, &c., concurred in the complimentary remarks of Mr. Mollison. The watch, we may add, was supplied by Messrs. Ferguson Brothers."

ARMY APPOINTMENTS.

Yeomanry.—We understand that Mr. Alfred Hoole, of Sheffield, has been appointed Veterinary Surgeon to the 1st West York Yeomanry Cavalry, *vice* Mr. B. Cartledge, resigned.

OBITUARY.

We have to record the death of Mr. Chas. Taylor, M.R.C.V.S., late of Nottingham, in the eighty-third year of his age. Several years since Mr. Taylor retired from all active professional duty, and took up his residence at Upper Holloway, London. He often made visits to the College and felt very deep interest in the advancement which he saw was being made in Veterinary Science. Few men stood higher in his profession, or were more appreciated by a large circle of friends in the Midland Counties than Mr. Taylor, during his long residence in Nottingham.

THE

VETERINARIAN.

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Communications and Cases.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 284.)

CACTALES.

The Cactal Alliance is remarkable for the fewness of its natural orders, of which there are only three. Also for the fact that they are nearly all tropical plants, of which not only England but Europe does not contain an illustrative wild species. Still the Cacti are so well known to our cultivators that we shall have no difficulty in finding an abundance of illustrative specimens.

The alliance is diagnosed as follows :—

Epigynous Exogens, with dichalmydeous polypetalous flowers, parietal placentæ, and an embyro with little or no albumen.

There are three natural orders, namely—

Homaliaceæ, with 30 species.
Loasaceæ ,, 70 ,,
Cactaceæ ,, 800 ,,

Of these the latter will now claim our attention.

CACTACEÆ (Indian Figs)

are Cactal Endogens, with the sepals and petals numerous and indistinguishable, scattered stamens, confluent styles, horizontal ovules, and seeds without albumen.

They are called Indian figs because the fruits of so many

of them are edible, and as stated by Dr. Lindley, "The fruit is very similar in its properties to that of currants; in some being refreshing and agreeable to the taste, in others mucilaginous and insipid; many are valuable as palliatives of intermittent and bilious fevers, in consequence of their refreshing subacid juice. The fruit of *Opuntia vulgaris* has the property of staining red the urine of those who eat it. That of *O. tuna* is of the richest carmine, and forms a valuable pigment employed at Naples as a water-colour."*

Besides the qualities of the fruit, the nearness of the Cacti to the currant is evidenced by the spiny nature of the gooseberry tree. The currantworts, indeed, have by some been considered as the same order as Indian figs.

The most extraordinary feature in the Indian figs is the strange forms which they take on, resulting, for the most part, from the suppression of leaves and their diversion into prickles; hence, then, as the leaf function has to be performed by the green flattened, fluted stems, De Candolle classes them with his 'Plantes grasses,' but, as observed by Professor Lindley, "The remarkable distension or increase of the cellular tissue of plants, from which the name of succulent is derived, is no indication of natural affinity, but is rather to be considered a modification of structure common to all orders. Hence, the immediate relationship of Indian figs is neither with Spurgeworts, nor Cassyths, nor Asclepiads, nor Asphodels, all of which contain a greater or less number of succulent genera. Through Rhipsalis, which is said to have a central placenta, they seemed connected with Purslanes, to which also the curved embryo of the section of Opunti as probably indicates an approach. De Candolle further traces an affinity between these plants and the ficoids (Mesembryaceæ), which correspond in their numerous petals, habit, annular embryo, and somewhat in placentation, but which have a many-seeded fruit, belonging to the perigynous rather than the epigynous category.†"

The order is remarkable for the strange forms some of its members take on, many so simulating the external aspect of the Sea-urchin as to have got the name of *Echinocactus, Echinopsis, Melocactus*, &c., but the grandest genus is the Cereus which has been described as follows by Mr. A. Smith.

"CEREUS.—An extensive genus of *Cactaceæ*, the species of which are remarkable for their singularity of form, and for the beauty of their flowers. Their stems are fleshy

* 'Vegetable Kingdom,' p. 747.
† Ibid.

while young, but many of them harden, and even become woody, in course of time; they vary very much in form, some species having cylindrical and ribbed or fluted stems, whilst others have them nearly square or angular; some grow erect, others creep along the ground or up trees, and send out roots from their sides; many are unbranched, while others have numerous branches, and some are jointed.

"The majority are armed with spines, which radiate from little cushion-like tufts placed at regular intervals along the ridges or angles of the stems. Their flowers are distinguished by the tube being somewhat funnel-shaped and generally armed with small spines, by the numerous stamens being united only at the base, and nearly as long as the petals, and by the slender thread-like style scarcely exceeding the stamens in length.

"*C. giganteus*, the suwarrow or saguaro of the Mexicans, is the largest and most striking species of the genus. It is a native of the hot, arid, and almost desert regions of New Mexico, extending from Souora, in lat. 30° N., to Williams River, in lat. 35° N., and found growing in rocky valleys and upon mountain sides, often springing out from mere crevices in the hard rock, and imparting a singular aspect to the scenery of the country, its tall stems, with upright branches, looking like telegraphic posts for signalling from point to point of the rocky mountains. While young the stems are of a globular form, gradually becoming club-shaped, and ultimately almost cylindrical, and from fifty to sixty feet in height, with a diameter of about two feet at middle height, and gradually tapering both upwards and downwards to about one foot. They are most frequently unbranched, but some of the older ones have branches, which issue at right angles from the stem, and then curve upwards and grow parallel with it. The stems are regularly ribbed or fluted, the ribs varying in number from twelve to twenty, and have, at intervals of about an inch, thick yellow cushions bearing five or six large and many smaller spines. The flowers are produced near the summit of the stems and branches, and are about four or five inches long by three or four in diameter, having light cream-coloured petals. The fruits are about two or three inches long, of a green colour and oval form, having a broad scar at the top, caused by the flowers falling away; when ripe they burst into three or four pieces, which curve back so as to resemble a flower. Inside they contain numerous little black seeds embedded in a crimson-coloured pulp, which the Punos and Papagos Indians make into an excellent preserve; and they also eat

the ripe fruit as an article of food, gathering it by means of a forked stick tied to the end of a long pole.

"*C. MacDonaldiæ* is one of the night-flowering kinds, and is of great beauty, its flowers when fully expanded being as much as fourteen inches in diameter, having numerous radiating, red, and bright orange sepals, and delicately white petals. The stems are cylindrical, creeping, and branched, not much thicker than the little finger, and having here and there small swellings with a spine in the centre. It is a native of Honduras. The most common night-flowering kind is the *C. grandiflorus*, a native of the West Indies.*

The species are remarkable for the differences in the size of their flowers, some of the Echinocacti having small inconspicuous flowers, whilst the full blaze of the *Cactus grandiflorus*—night-flowering Cereus—some twenty inches in circumference, must be seen to be fully appreciated. The ripened fruits are often small and inconspicuous, whilst that of others present beautiful and attractive colours, and tempt by their apparent lusciousness; from so many of the species acting as the nidus of the cochineal insect, both the plants and the insects are cultivated in Mexico for the sake of the colouring matter yielded by the cochineal. The species employed for the purpose are—

Cactus cochinellifer,
„ *tuna*,
Opuntia cochinellifera,
„ *maxima*.
} Produce the different sorts of cochineal.

The cochineal is employed for making the beautiful pigment known as carmine, so much employed in the arts. Pereira says under the following head:

"Physiological Effects and Uses.—Diuretic, diaphoretic, antispasmodic, and anodyne qualities, have been assigned to cochineal, but without the least evidence of their existence. A mixture of carbonate of potash and cochineal is a popular remedy for hooping-cough. The only real value of cochineal is as a colouring matter, and as such it is used in powder and solution. In the arts it is extensively employed in dyeing scarlet and crimson, and in the manufacture of *carmine* and *lake*.†

We have no objection to the colouring of medicines with cochineal, but we decidedly protest against its employment in our food. Thus, the clever housewife must colour her pickled cabbage and her stewed pears with a nauseous insect

* 'The Treasury of Botany.' p. 256-7.
† Pereira's 'Materia Medica,' p. 2217.

which is first cousin to a bug, when all the time they are more attractive to people of sense without such an adjunct; and yet such is the influence of fashion that we have known a lady, critical in such matters, to declare that it was not decent to bring uncoloured pears to table.

RUPTURE OF INTESTINE OF A PUPPY ASSOCIATED WITH NEMATODE WORMS.

By G. H. R. Wilkins, M.R.C.V.S., Burton-on-Trent.

On the 4th of December, 1877, I was requested by a gentleman of this town to see his dog, a valuable Mount St. Bernard puppy, about three months old. Upon visiting the animal I found him suffering from a mild attack of jaundice, as evidenced by the yellow colour of the visible mucous membrane and skin. The appetite was fairly good, and the bowels slightly constipated, the fæces presenting the characteristic colourless condition seen in this disease. I gave directions as to his general treatment, and at the same time stated my opinion that in all probability the animal would speedily recover. Upon the following morning I received a message from the owner to the effect that the patient had been found dead in his kennel, and as several of his dogs had been poisoned a short time previously, that he thought this one might have shared the same fate; he therefore wished to have a *post-mortem* examination made.

Examination.—On making an incision through the walls of the abodomen, the first object that met my view was a rupture of the intestine. A closer examination showed that the rupture was associated with intussusception, and that a portion of the invaginated bowel was protruding through the rent, thus exposing its mucous lining membrane, which was of a dark purple colour, and resembled an ordinary sausage in shape. On cutting into the intussuscepted part I discovered five nematode worms, two of them being remarkably large, measuring seven inches in length with a breadth in proportion. The fact of their being so large made me feel dubious as to what species they belonged, so I sent them to Dr. Cobbold, inquiring whether they were examples of the *Ascaris marginata* or not; he kindly replied, informing me that my surmise was correct, and that the parasites were the *Ascaris mystax*, variety *marginata*. When I first saw this case I thought it was one of jaundice or hepatic distemper,

but after the autopsy I altered my opinion, and came to the conclusion that these worms were not only the cause of the lesion above mentioned, but that the irritation set up by them in the intestines had extended to the gall-duct, producing contraction of it, and thus giving rise to the disease *Icterus spasmodicus*, as so spoken of by some writers.

I send these incomplete remarks, not because I consider there is any peculiarity about the pathological condition of the parts, but merely to show what a great amount of mischief a small number of nematode worms are capable of producing in the digestive organs, and alimentary canal in particular, of the dog.

DEATH OF A YOUNG PUPPY FROM THE INTESTINE BEING PIERCED BY NEMATODE WORMS.

By H. Olver, F.R.C.V.S., Tamworth.

About the middle of April I sent to Professor Cobbold some parasites which I had taken from a terrier puppy *seven weeks* old. He wrote in reply that the parasites were fine specimens of the *Ascaris mystax*, variety *marginata*; that you had examined the worms for him and that he wished me to publish the case, it being rare for so large a number of fully developed nematodes to exist in so young a puppy.

My patient was a well-bred terrier puppy, the property of Mr. Clarson, and was sent here on the evening of the 11th of April for treatment, but no history of the case was given. From the emaciated condition and general unthrifty appearance of the animal, together with the pendulous and swollen state of the abdomen, I at once diagnosed the existence of intestinal parasites, and directed that a vermifuge should be given in the morning; during the night, however, the puppy died.

The *post-mortem* examination revealed the presence of worms in great numbers; the stomach and intestines might figuratively be said to be filled with them, there being no less than sixty-five found in these organs. The most extraordinary feature in the case, however, is that the walls of the duodenum about half an inch from the stomach were pierced by the parasites,and five of them had partly passed through the apertures, one half of each worm being inside the gut and the other half outside. All the other viscera of the abdomen were healthy.

REPLY TO MR. BEDDARD.

By J. W. Hill, F.R.C.V.S., Wolverhampton.

In reply to a letter from Mr. Beddard in the *Veterinarian* of last month, relative to some remarks I made at the meeting of the Lancashire Veterinary Medical Association, I beg to state that the said remarks were based on information which I received soon after the slaughter of the cow in question, and regarding which, until Mr. Beddard's letter appeared in your Journal, I had not been undeceived. I am glad Mr. Beddard has made light the true facts of the case and am pleased to hear that he was not held responsible for his error.

Respecting, however, the remarks complained of I may, in justice to myself, observe that I am made to say exactly the reverse of what I did, in stating that I had erred and should have to pay, or that my opinion was confirmed by the third veterinary surgeon. The boot was just on the opposite leg; Mr. Beddard being the inspector at that time, *he* had to declare the nature of the disease. I only acted as veterinary adviser to the Corporation Farm Committee. Further, I may say that I complained personally to the editor of your contemporary that my speech had been misreported and was calculated to convey a wrong impression. Had the two words in brackets (*the speaker*) been omitted, that sentence and the following one would have read correctly.

Mr. Beddard says rightly, that after seeing the lungs I still maintained there were indications of the disease. I did so, and I am even now of opinion that it was a case of pleuro-pneumonia in its congestive stage. The portion of wire alluded to had held a harmless position for a long period. No inflammatory action anywhere around it (*of recent date*) was apparent, and I do not for a moment believe it had anything whatever to do with the increased respiratory murmur and the other lung symptoms which were manifested.

Regarding the nature of the case, however, Mr. Beddard and Mr. Pritchard thought differently; nevertheless we may each enjoy our own opinion, with the full liberty of expressing it.

VETERINARY COLLEGES AND VETERINARY PROFESSORS IN THE UNITED STATES.

By a "Member of the Royal College of Veterinary Surgeons, practising in America."

The readers of the *Veterinarian* in this country cannot view without interest the efforts which have recently been made to improve veterinary education. It is a healthy indication that veterinary education excites so much interest and discussion, and it has already led to good results. We appear to be in danger, however, in this country of having Colleges established which have neither a faculty to teach nor students to learn, and we are doubtless indebted to the persistent efforts of Mr. Gadsden, of Philadelphia, for cutting short the existence of one institution of this kind. Indeed the profession and the public are indebted to Mr. Gadsden for performing an important public service by his unaided and unpaid exertions, as there can be no doubt that sending a number of men through the States, who hold what were ostensibly genuine diplomas, but who had never received any veterinary education, was calculated to damage the general status and character of the veterinary profession.

We think that fraud and imposture in connection with veterinary education should be exposed, as it cannot always be punished. In the *Spirit of the Times* of March 23rd there is an article on "The Plague of Glanders, by Professor J. A. Going, M.R.C.V.S.E." Now, "Professor Going's" name is not in the Register of the Royal College of Veterinary Surgeons, so that he has no right whatever to append M.R.C.V.S.E. after his name.

I have seen it stated in the *Spirit of the Times* that Mr. J. Going is professor of surgery and surgical pathology in the New York College of Veterinary Surgeons, which is advertised as "The only College chartered by the State Legislature and authorised to issue Diplomas." One might reasonably expect that the professors of such an institution should have acquired their diplomas legally, as a degree can be assumed even by a man who could not write, who might employ some one to write his name and append the degree or title to it. To use an American expression, this method of obtaining degrees is "too thin." If all veterinary aspirants follow "Professor Going's" example, and content themselves with writing "M.R.C.V.S.E." after their names,

the New York College of Veterinary Surgeons might close its doors, as study would then become unnecessary.

It cannot but be said, however, that the professor has not treated the subject of glanders with more or less originality, which, coming from so eminent a gentleman, is not unworthy of consideration, though it may well be doubted whether his views will gain general acceptance. Professor Going remarks, "If our sanitary laws were executed with the same impartiality, rigour, and judgment, which characterised those of the ancient Hebrew, a man having an animal supposed to be so affected, if he refused to have him destroyed, should be compelled when any one approaches him to cry, like the eastern sufferer from leprosy, "Unclean."

This statement contains the startling assertion that, according to law in New York State, a man who owns a glandered horse is bound to cry out "Unclean" when he meets any one on the street, but owing to the laws not being executed with the impartiality of the ancient Hebrew, the rule is not enforced. We need hardly say that the law which "Professor Going" charges public officials with a want of rigour and impartiality in not executing *does not exist.*

We think, speaking with deference, that the law of the modern Britons can hardly be improved on in the existing state of knowledge, and that the killing of the glandered horse immediately on its being established by veterinary testimony that he is glandered is about the best way to dispose of him.

Mr. Going further remarks, "There is a form of the disease called spurious glanders, in which there is no discharge from the nose, no ulceration of the Schneiderian membrane, nor is there any swelling of the submaxillary glands; but all of those symptoms may become apparent if they are only permitted to become developed. The point we mean to make is that, though we must admit they are not to be seen, still they may be there, but in a latent condition. This is by some called pulmonary glanders."

It appears clear to me that if the symptoms are not there they cannot be seen. The disease may be in a latent stage, but the symptoms cannot be latent, as they must either be present or absent. The confusion which pervades the professor's ideas, and his inability to perceive obvious distinctions, will not commend him as a teacher.

The professor further remarks, "When blood is found dropping from the nostrils, a careful examination should be made, as it is indicative of coming glanders, but it is also often caused by *hæmoptomitis*, or bleeding from the lungs."

I presume the professor means hæmoptysis, as there is no such word as *hæmoptomitis*. A professor should be expected to wrestle successfully even with words of Greek derivation.

If a horse affected with glanders bleeds from the nostrils it can hardly be regarded as indicative of "coming glanders," but shows, on the contrary, that the disease has produced serious and important lesions.

In speaking of the pathological anatomy of "spurious glanders" the professor says, "It is said that almost invariably when an animal dies from spurious glanders, the nerves of the spleen are found to have thrombi in them, the large branches being generally obliterated by coagulated fibrine."

It will be seen from the above quotation that the professor's pathological anatomy is different from that taught in most schools; it does not appear quite clear whether he is the father of this new doctrine himself or not, but at any rate he adopts it and gives it the stamp of his approval.

In the same paper which contains the article on glanders the professor advertises that he has bought the recipe from Mr. Copeman for making Copeman's Tonic Powders—that they are the most "magical" condition powders ever presented, &c. &c. This appears about as incongruous as if Sir James Paget were to buy the receipt for making Professor Holloway's Pills, and then to puff them vigorously through the newspapers.

The greater part of the veterinary literature which is published in this country is of a very trashy character. The matter of most veterinary works is borrowed wholesale from British writers, and the only originality which marks them is that of frequent blundering. Professor Law's recent work, however, is an honorable exception to these remarks, as *The Farmers' Veterinary Adviser* gives the results of extensive research and experiences in a very concise and accurate form.

Pathological Contributions.

CATTLE PLAGUE.

THE latest reports from St. Petersburg announce that cattle plague exists in the governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, Bessarabia, Bothynia, Podolia, Kherson, Warsaw, and Taured.

A report from Czernowitz, dated 13th May of the present

year, states that in the second half of the month of April cattle plague was stamped out in the village of Waszkowtz, district of Wisznitz, province of Bukowina, and that cattle plague now only exists in the village of Zeleneu, district of Kotzmann, where the disease broke out during the first half of the month of April.

From Constantinople it is reported that cattle plague among horned cattle in the district of Philippopolis has latterly assumed the proportions of a serious epizootic; 80 per cent. of the cattle attacked succumb.

A report from Jassy announces the continuance of cattle plague in that district.

PLEURO-PNEUMONIA.

Reports of the existence of pleuro-pneumonia were received during April from the following counties:

Bedford, Cambridge, Chester, Durham, Essex, Huntingdon, Kent, Lancaster, Leicester, Middlesex, Norfolk, Northampton, Northumberland, Notts, Rutland, Salop, Somerset, Stafford, Suffolk, Surrey, Warwick, York (East Riding, North Riding, and West Riding), the Isle of Ely, the Metropolis, Anglesey, Denbigh, Glamorgan, Aberdeen, Edinburgh, Fife, Forfar, Kincardine, Lanark, Perth, Renfrew, Roxburgh, Stirling.

FOOT-AND-MOUTH DISEASE.

Foot-and-mouth disease appears to have existed during April in the following counties:

Berks, Chester, Essex, Hereford, Hertford, Lancaster, Leicester, Norfolk, Northampton, Northumberland, Sussex, Warwick, Wilts, and York, West Riding.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of April, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise:—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Bremen . . .	London . . .	Sheep-scab . .	...	33	...	...	33	Slaughtered under the instructions of the Privy Council.	...	4928	...	...	4928	Slaughtered under the instructions of the Privy Council.
Hamburg . .	„ . .	Foot-and-Mouth	...	4	...	...	4	Ditto	...	671	...	...	671	Ditto
Rotterdam . .	„ . .	„	...	2	...	...	2	Ditto	49	647	...	...	696	Ditto
Total Diseased Animals .		Foot-and-mouth	...	6	...	...	6	Total Healthy Animals .	49	6246	...	...	6295	
		Sheep-scab . .	...	33	...	...	33							
		Total . .	...	39	...	...	39							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in Animals brought to this Country from Unscheduled Countries during the Month of April, 1878.

Veterinary Department, Privy Council Office,
May 6th, 1878.

Facts and Observations.

Searching for Trichina.—M. Tikhomiroff, in making a microscopic examination of pork supposed to contain this parasite, digests small pieces for half an hour with their weight of chlorate of potash, to which he adds four times as much nitric acid. The muscular tissue thus treated is agitated with distilled water till the fibrils separate. If trichinæ are present, a hand lens shows the fibrils with fusiform swellings, and the microscope recognises the creatures.

Action of certain Colouring Matters on the Tissues.—It seems that this subject has been recently investigated by Herr L. Gerlach, of Erlangen, an abstract of whose paper is given by the *Medical Record* (Jan. 15). It states that Herr Gerlach adopted the method of saturating the tissues with indigo carmine for days and even weeks together; the former experimenters, Heidenhain, Kupfer, Von Wittich, and Thoma, only injected such a quantity of indigo carmine as remained in the body for a comparatively short time. The author injected indigo carmine into the lymph-sac of several frogs, and killed them at intervals of two days, always renewing the injections. The microscopic examination showed that the white blood-corpuscles are capable of taking up indigo carmine.

1. The first traces of this action appear on the third day after the introduction of the colouring matter. After this time both the number of cells which contain the pigment and the quantity of pigment in the individual cells increase.
2. The cells of the connective tissue, *e.g.* of the tendons, take up the colouring matter. This is to be observed from the fourth day.
3. No indigo pigment is deposited in the bone-cells.
4. The pigment is found in the cartilaginous tissue, *e.g.* the articular cartilage of the hip-joint, from the fifth day onwards. None is found in the ground-substance or matrix.
5. The nerve-cells never contain the indigo; only in a few cases was it found in the sympathetic ganglion-cells between the cell-contents and the sheath.
6. The blue colouration of the epithelial cement pointed out by Thoma and Küttner is also true for that of the so-called endothelium.—*The Monthly Microscopical Journal.*

THE VETERINARIAN, JUNE 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE MORBID ANATOMY OF PLEURO-PNEUMONIA.

DR. YEO's article on the morbid anatomy of pleuro-pneumonia is deserving of a careful study by those members of our profession who are engaged in the performance of official duties connected with contagious diseases of animals.

Restrictions of a somewhat onerous character are imposed on the owners of cattle among which a contagious disease exists, and it is above everything important that no mistake should be made in diagnosis. In the living diseased animal symptoms may be in some instances obscure; cases have occurred of animals affected with tuberculous deposit in the lungs, showing signs of pleuro-pneumonia of a character sufficiently defined to deceive experienced observers, but these cases are rare and do not add much to the difficulties with which the veterinary inspector has to contend. In the majority of instances the signs of pleuro-pneumonia are well marked; and it is seldom, indeed, that the careful examiner has to correct his diagnosis by the *post-mortem* appearances. The real difficulty seems to occur in consequence of a want of a distinct apprehension of the nature of the morbid changes which are really characteristic of the disease. Even some who are perfectly familiar with what they term the advanced stage of pleuro-pneumonia are now and then induced to look upon the appearances which are presented in ordinary congestion of the lungs or bronchitis as indicative of the contagious lung disease in an incipient stage.

We have had among the morbid specimens sent to the College for inspection a variety of diseased lungs, and some perfectly healthy, as reported cases of pleuro-pneumonia. It is true that the senders of the specimens were veterinary surgeons who took the correct view of the matter, but the

fact that the nature of the diseases was disputed by others seems to show that there is a good deal of confusion existing as to the evidence which indicates the presence of changes characteristic of pleuro-pneumonia as distinct from other affections; and a recent case which came before the law courts of Scotland proves that a difference of opinion on this point may exist among high veterinary authorities.

In reference to the morbid anatomy of pleuro-pneumonia Dr. Yeo remarks, "There are few diseases in which the *post-mortem* appearances are more characteristic than in pleuro-pneumonia. So distinct are the characters of the advanced stage of the disease that the most unscientific eye can recognise it after seeing a few cases. The group of morbid changes is very constant, and, moreover, there is a general character which is so peculiar as to be easily recognised in every stage of the disease, and which has, therefore, been deemed specifically diagnostic of it."

It is the fact of the constant character of the changes which occur in the disease that we wish to have universally recognised. It should be an axiom in veterinary science that the condition of a diseased portion of lung in pleuro-pneumonia, whatever may be the stage of the disease, is perfectly well defined and constant, and that a *post-mortem* examination will enable the pathologist to say decidedly and without risk of error whether or not the disease exists. Thus is the teaching of Dr. Yeo's paper, which is published in the *Journal of the Royal Agricultural Society* for the information of agriculturists, who may not unreasonably demand that, as the point is one which admits of definite determination, there shall be no more mistakes made by veterinary inspectors as to the existence of pleuro-pneumonia.

THE DOG NUISANCE.

A VERY practical mode of diminishing the number of wandering curs has been devised by Messrs. Newton, Chambers and Co., the proprietors of the extensive Thorncliffe

Collieries and Ironworks, who have recently issued a singular notice to their workmen. It seems that for some time past much damage has been done to farmers in the neighbourhood of the collieries and the works by the ravages of dogs among their flocks, these dogs being allowed to run at large and to do very much as they please. As the only means of putting a stop to this state of things, Messrs. Newton, Chambers and Co. have given the following notice to their men:—"In consequence of the serious damage which has recently been done to sheep in this neighbourhood, we have decided not to employ any person or allow any tenant to live in our houses who keeps a dog, and therefore we shall be glad if you will get rid of yours within a fortnight from this time."

We extract the above paragraph from the *Times* of May 24th, and we commend the action taken by Messrs. Newton & Co., as one which deserves to be generally adopted.

Extracts from British and Foreign Journals.

THE AMERICAN CATTLE TRADE.

By Professor H. E. Alvord, of Easthampton, Massachusetts.

(*Continued from p.* 313.)

Eight years ago a young fellow went out to Colorado with about £400 borrowed money. He bought stock cattle, beginning in a modest way; has "roughed it," attending to his business in person, with Mexican herders to help; and he now owns 8000 head of cattle, is free from debt, is worth £20,000, and his sales this year will amount to £6000 Last year he sold four-year-olds weighing 1000 lbs., delivered on the railroad in Wyoming, for £5 a head, which was rather above the average of the market. Next year he expects to sell three-year-olds, heavier and better, the first-fruits of a purchase of Shorthorn bulls, which he is now using exclusively, as a matter of demonstrated economy as well as improvement.

Two of these may be exceptional cases, the last is not so. Numerous others could be given, with more or less variation of details, but the same general result. Twenty-five per cent. per annum upon the invested capital is the profit *depended upon* in this business. Manifestly, with such a state of things, the beef stock these herders send eastward can be sold at the shipping points at two thirds the prevailing prices, and still yield a satisfactory return. In further support of this statement, reference may be made to the prices paid by the United States Government for beef bought by contract in large quantities for the subsistence of the army and of the Indians on the Plains. In 1869 large purchases were made at $1\frac{3}{4}d.$, pressed, or £3 10*s.* a head for steers of 1000 lbs., delivered in the Indian territory, 200 miles from the Texas ranges. (I inspected many of these cattle myself, and know they were good beeves of their kind.) In 1872, at the same point, a little more (3·68 cents per lb., dressed) was paid for 6,000,000, lbs.; in 1874, $1\frac{3}{8}d.$ per lb.; in 1876, $1\frac{7}{8}d.$ Here is an average of £3 12*s.* for four-year-olds of 1000 lbs., which covered driving, risks in an Indian country, and the *large* profits always secured by the Government contractors on our frontier. The average price received for these animals by the ranchemen who raised them was probably £2 16*s.* Likewise, in Wyoming territory during the last three years, contractors have sold the United States 25,000,000 lbs. of dressed beef, when the animals had to be driven 200 miles north of Cheyenne, at an average price $2\frac{5}{8}d.$ per lb., which is about £5 4*s.* a head for bullocks of 1000 lbs. The stock-raisers of Colorado and Wyoming could have sold them more profitably at the railroad for £4 4*s.* each, had there been a demand; although this is 15 per cent. below the market rates of that vicinity.

It is undoubtedly true that the eastern markets will not remain satisfied with the grade of beef which these extreme western herds have produced. But already an improvement is perceptible. The New York reports for June state: "Texans, which, by the by, are rapidly improving in quality and reputation, brought $5\frac{1}{2}d.$ and $5\frac{3}{4}d.$ per lb., 56 per cent. of beef." This improvement is certainly to be expected, and a little experience will assure its progress. The breeders find that by using pure-bred shorthorn bulls, the first cross with the Texan stock produces animals which are better prepared for market, in size and condition, at two and three years old, than the natives a year or more older. The saving of time and freeing of capital thus secured, more than counterbalance the objections to the necessary outlay, and will ultimately

cheapen the production as much as it helps the quality of the beef.

It is therefore safe to assert that *it is possible* for beeves weighing 1200 to 1300 lbs., such as now sell in New York for £15 to £17, to be placed there at a cost of from £10 to £11, and still be profitable to all who handle them. That being so, beef can be sold in our eastern markets at $3\frac{3}{4}d.$ per lb., of the same grade as is now quoted at $5\frac{1}{2}d.$

The next point is to connect these beef-sales in New York with the subject of exportation. The animal I have described and "figured on" will not furnish as high a grade of beef as is demanded in New York by the exporters; but its carcase will take the place in the New York market of one which is exported. While the northern-wintered and corn-fed Texan steer sells at $5\frac{1}{2}d.$ per lb., the choicest bullocks, such as are selected by the exporters, are quoted at $6\frac{1}{4}d.$ per lb. for the extreme. This relation is sure to be maintained, and as the price of the western beef stands or declines, so must that of the highest grade accord with it, whether the animals be from the prairies of Illinois, the blue-grass of Kentucky, or the stalls of New York and Vermont. This cannot be otherwise: first, because the difference in quality of the two grades of beef is not now such as to command a greater difference in price; and secondly, because the quality of the lower grade is certain to improve henceforth until it will fairly rival the higher. This difference in price between choice steers of high-bred stock from eastern and corn-growing farms, and the improved western beeves, is therefore more likely in the future to decrease than to increase.

But as to the exportation of dressed beef. This trade is, undoubtedly, established, and although it may fluctuate, it will not cease. New men and more capital are reinforcing it, and the many drawbacks and obstacles in the business are more likely to be overcome than to overcome it. Mr. Eastman, one of the earliest and largest exporters—to whom I am indebted for many courtesies in reference to this matter—has invested about £25,000 in thirty refrigerating compartments in different vessels, with accompanying machinery, chill-rooms at the slaughter-houses, &c.; and other parties in New York are largely interested, as well as operators at Boston, Philadelphia, and Baltimore. Canada is also contributing to the trade, as well as sending over live cattle. Portland, Maine, seems to be a favourite point for shipments of Canadian beef, 12,000 quarters having been sent to England from that port during the first four months of this year. It is estimated that over 50,000 carcases have been sent out from that port

during the first half of this year, Mr. Eastman alone having shipped an average of 1000 beeves a week. This, against 20,000 animals exported for the whole of last year, shows the growth of this business, and all upon rising prices. The average price paid by exporters at the yards for nine months past is thus stated :—$5\frac{3}{8}d.$, $5\frac{1}{4}d.$, $5\frac{1}{2}d.$, $5\frac{5}{8}d.$, and $5\frac{7}{8}d.$, $6d.$, $6\frac{1}{8}d.$, $6\frac{1}{8}d.$, $6\frac{1}{4}d.$ per lb. This steady advance is accounted for by the fact that, during the period covered, the supply of first-class beeves has not equalled the demand. Previous to the opening of this new trade, our home-markets showed a surplus; but the exportations have increased, thus far, faster than it was possible to increase the product. No such difficulty is apprehended in the future, however, and no further advance in prices.

Referring to previous figures, we see that there is a large profit to most of those concerned in raising, feeding, and marketing cattle in this country, when the best beef sells alive in New York at $6\frac{1}{4}d.$ per lb. estimated dressed weight This is, as above, the highest price reached for the best during the past nine months, the average being $5\frac{3}{4}d.$ *So, if the exporter can afford to make shipments when paying* $6\frac{1}{4}d.$, *he is safe enough.* The men who export, buy their beeves at the yards, have their own slaughter-houses, dress, pack, and ship, and remain the owners of the meat when sold by the cargo on the other side. The animals thus purchased, if in new York, weigh about 1400 lbs., dress 58 per cent. of this, about 800 lbs., and cost, say, £20. But the buyer gets the "fifth quarter;" and as this is worth in New York about £3 for such an animal, he is able to slaughter, pack, and ship the four quarters, and be satisfied if they *then* yield him £18, or $5\frac{5}{8}d.$ per lb., for what he purchased nominally at $6\frac{1}{4}d.$ And this $5\frac{5}{8}d.$, at which the beef stands when ready to *leave* New York, means United States currency, or $5\frac{3}{8}d.$ in gold. The cost of ocean-transit is $1\frac{1}{8}d.$ per lb., gold, at the outside, making the lb. of American beef represent to its owner, when landed at Liverpool or Glasgow, practically, $6\frac{1}{2}d.$ This, being of the best quality, brings the highest price; and if sold for 4*s.* 4*d.* per stone of 8 lbs., it covers all costs, and the exporter makes his profit, as shown, in the handling at New York. This profit I place at 4 per cent. upon the total capital employed, and the nature of the transaction makes it probable that one constantly in the business will repeat it at least ten times a year with the same capital. But, as before stated, the highest rates prevailing at any time during several months past are those which have been taken in considering the cost to the exporter, while the *average price* which the exporter

has received for *good* beef during the same period at Liverpool is understood to be at least 4*s*. per stone. *Most* of the shipments during the last six or eight months have reached the other side at such a cost to the exporter, that all he could obtain over $5\frac{1}{2}d.$ a lb. per carcase was *surplus*, or profit over and above what he considered as covering the rise and risk of his capital.

The details of the method of ocean transit of dressed meat, and the itemised cost of the same, are omitted, because the one has been fully described and illustrated in numerous publications during the present year, and the other varies with the circumstances attending each shipment, and the efficiency of the manager. Various improvements and means of economising—the results of experience—have already reduced the total cost between shipment and delivery from $1\frac{1}{2}d.$ to $1\frac{1}{8}d.$ per lb. average, and it is confidently expected that a further reduction will be effected.

While the exporters of American dressed meats depend for their profits and the permanence of the business upon the ruling prices on the two sides of the ocean, the fact of the trade must itself influence those prices. When the margin between them becomes too small, the shipments may be suspended, and a surplus in the eastern markets of this country will soon carry prices down to a point which will reopen the trade. The extent of the trade must even now, though perhaps imperceptibly, reduce to some extent the prices of English beef at its great markets. I have noticed that, at periods during the last fifteen months, when the prices of English beef at the Metropolitan Meat Market have been lowest, the reports have in each case noted the presence of an unusually large supply of good American beef. Remove the American competition entirely, and prices in England will probably soon warrant new consignments. The trade already has a double action.

It is true, undoubtedly, that the selection of choice animals by the exporters, and the amount of their shipments, have caused of late a scarcity in the higher grade of beef in the home markets, and, indeed, the general demand has somewhat exceeded the supply; hence the advance in prices here. This can have but one effect—an increased production and lower rates. It has been shown that both are quite feasible, accompanied, too, by a steady improvement in the average quality of the beef marketed. It is not probable that any considerable decline will be realised; for if the foreign demand is such that increased shipments will meet with ready sales at anything like the prevailing prices of American beef in

England during the last year, the exportation of our entire surplus will tend to hold up the prices here; but it is the *possibility* of the future, as well as the present fact, that we are considering. Should a sudden decline of prices occur in the cattle trade, it would cripple holders who had bought at higher rates; but the general result reached by this extended review of the subject is, that it is possible to effect a gradual reduction in the cost of production and handling at all points, without embarrassment to any concerned, or such lessening of profits as will diminish the supply, until beef fully equal in quality to the best now exported can be started from Atlantic ports in any quantity that is demanded, at a cost to the owners of $3\frac{3}{4}d.$, and delivered in Great Britain at a cost of $4\frac{1}{2}d.$ per lb., gold basis.

In conclusion, therefore, I believe that American beef will be profitably sold before long, in Liverpool and Glasgow, at $4\frac{1}{2}d.$ per lb. (3*s.* per stone) by the carcase; that the supply at this price can be brought to meet demands not yet thought of; and that the quality will, in time, be such as to satisfy the most discriminating British market.

Postscript.—In reading over this paper, two or three matters are called to my mind, which, unless at least mentioned, might be regarded as serious omissions.

1st. Canada has been mentioned only incidentally. There has been no intention to disregard the cattle interest of that great region, but it has ample opportunity of making itself known to British readers, and I deemed it best to confine myself to territory of which I had personal knowledge.

2nd. Similarly, very little has been said of most of the Southern States, although several of them have been specially mentioned. The great agricultural industry of the South has, in years past, been turned towards tobacco, cotton, and sugar, as specialities; and cattle husbandry has held a minor position. That region, as a whole, has done little more than supply itself with beef, and, indeed, some parts have bought largely from the West. But a change is taking place; less attention is being paid to specialities, and a wider range in agriculture is being taken. The facilities for cattle production in Virginia, Tennessee, the Carolinas, and the Gulf States, are such that that region is almost certain to make itself felt in our live-stock markets, in the event of a considerably increased demand.

3rd. This paper has been intentionally confined to *beef* production. The raising of sheep and swine, and the home markets for mutton and pork, as well as their exportation, could not well be considered at the same time.

4th. The exportation of neat cattle alive has been given no

attention, because I believe that this trade cannot grow in the future in comparison with the exportation of dead meats, but that, on the contrary, the former must ultimately give way to the latter.

5th. A problem, much more interesting than the shipment of live cattle to England, is the possibility of moving the slaughtering-places for the dressed beef exported to places farther west, avoiding railroad transit of live-stock. It is almost too early to discuss this intelligently, but it cannot be long before means will be devised for supplying our eastern markets, and probably, too, the wants of the exporters, with beef dressed in the Mississippi Valley, if not at a still greater distance.—*Journal of Agricultural Society of England.*

RABIES CANINA IN THANET.

ALTHOUGH we are happy to say that no further ill effects appear to have resulted from the undoubted outbreak of rabies which brought the season of the Thanet harriers to a premature end, and placed the kennels at Brooksend, owned by the gallant and esteemed Captain Johnston, of Sarre Court, for a time under suspicion, we regret to have to chronicle another outbreak of the disease at Birchington (within a few minutes' walk of the Brooksend kennels) during the latter part of last week but one. It appears that on Thursday week, Mr. White, the huntsman of the Thanet pack, accompanied by a young pointer bitch, was passing the "Sea View Hotel" at Birchington—the lately deceased proprietor of which (Mr. Moss) was accustomed to keep some sporting dogs, and amongst which the greyhound known as Alert was included—noticed Alert lying in the road, and was struck by the dog's "all-to-pieces" appearance, as he phrases it, and seeing that, in a state of great tremor and with wildly vacant eyes, it seemed for a moment to hover over his pointer, he interposed his stick and his leg between the dogs, and the greyhound then ran into the stable yard, whence soon afterwards the cry of a terrier was heard as if being worried, and on turning round Alert was seen to seize and shake violently a small terrier of Mr. Mockett's, which had strayed for a moment into the yard, but at once the greyhound dropped the terrier, and did not attempt to follow it. From inquiries made on the spot, it appears that about a fortnight before, a sheep dog from Marsh Side, accompanied by a farm servant, passed by the spot where, in front of the "Sea View Hotel," this Alert dog was accustomed to lie, and though the sheep dog was not seen to bite the greyhound,

yet as he was subsequently seen to attack three other dogs, and was killed, as being mad, next day, it is reasonable to suppose that the virus was first introduced by his means into Birchington. Be this as it may, it is certain that Alert bit a valuable greyhound known as the Burglar, belonging to Mr. Dennett, as well as a sort of bull-terrier who was his kennel companion, and made a snap at the hand of a servant man in the employment of Mr. Tanton, of the Lawn, who was carelessly passing by, slightly abrading the skin, but without drawing blood; and on the following day Mr. White loaded his gun, and having satisfied himself of the existence of rabies—of the symptoms of which he had had some experience in the outbreak of the disease in the kennels of his pack in February last—he shot all three of the victims, and sent a messenger to Mr. Mockett, who lives some five miles away, near Broadstairs, warning him of the danger to which his terrier had been exposed. Mr. White's description of the two deceased greyhounds is that they were violently tremulous in the presence of a strange dog, with raised back and rough staring coat, eyes prominent and restless, and loins tucked up, giving the idea of dogs that had got distemper badly, and had been kept foodless for a week. The snapping at imaginary enemies, which is so often a marked feature in *rabies canina*, seems not to have been noticed in these latter cases.—W. L. S., in *Land and Water*.

ON THE ABSORPTION OF CARBONIC OXIDE.

Gréhant has performed some experiments in order to ascertain what proportion of this gas must be mingled with the atmosphere before it is capable of being absorbed by a living animal. Details of a single experiment will illustrate the method employed; 30 c.c. of blood were drawn from the superior cava of a healthy dog; the animal was then made to breathe air containing $\frac{1}{392}$ of carbonic oxide for half an hour, and at the close of this period a second sample of blood was drawn. After another thirty minutes, during which pure air was supplied, a third specimen of blood was taken. The three samples of blood were defibrinated and shaken with oxygen; the gases contained in them were then extracted *in vacuo* and subjected to quantitative analysis. The first yielded 28·3 c.c. of oxygen per cent.; the second, 14·9 c.c.; the third, 20·3 c.c. Inasmuch as the hæmoglobin of the red corpuscles takes up oxygen and carbonic oxide in the same proportions by volume, the blood must have absorbed

13·4 c.c. per cent. of the latter gas during the period of inhalation, and given up 5·4 c.c. per cent. during the subsequent half hour. The general conclusion at which Gréhant arrives is that an animal breathing an atmosphere containing only $\frac{1}{779}$ of carbonic oxide will absorb enough of this gas in thirty minutes to incapacitate one half of the red corpuscles in its blood for taking up oxygen. If the atmosphere contain $\frac{1}{1449}$ of the gas, only one quarter of the red corpuscles will be rendered functionally impotent.—*Comptes Rendus,* Avril 8, 1878.

INFLUENCE OF DIFFERENT GASES ON FERMENTATION.

The following method has been employed by O. Nasse for investigating this problem (*Pflüger's Archiv,* xv, 471). He introduced ice-cold solutions of cane-sugar mixed with invertin (a ferment derived from yeast) into glass tubes, and passed various gases through them to saturation: the contents of the tubes were then gently warmed, and after the lapse of one hour and a quarter, raised to the boiling-point. The amount of inverted sugar formed in each of the tubes was then quantitatively determined. The tube through which carbonic acid had been transmitted yielded 20 milligrammes; that treated with hydrogen, 8 milligrammes; that simply exposed to the air, 7 milligrammes; while those through which oxygen and carbonic oxide had been passed contained none at all. The two last-named gases, accordingly, have power to inhibit the action of the ferment; but a very small admixture of carbonic acid to either of them is enough to abolish this restraining power and to enable the fermentation to proceed. The same method of inquiry, applied to the amylolytic ferment of the saliva, furnished much less striking results; carbonic acid, however, was found to quicken the operation of this ferment, though not to any great extent. The process of death in muscular tissue was then investigated. Bits of muscle were suspended in salt solution through which carbonic acid or air were transmitted; a comparative estimate was then made of the glycogen and muscle-sugar produced. The first effect of pure carbonic acid was found to be an acceleration both of the formation and the destruction of sugar, the former being more influenced than the latter; subsequently, however, both processes underwent retardation, the latter more than the former. In regard to the peripheral nerves, Nasse confirms Ranke's assertion that carbonic acid diminishes their excitability from the first (without an initial period of exaggera-

tion), but does not annul it completely for a long time. When some other indifferent gas is substituted for the carbonic acid, the nerves speedily regain their normal excitability. But on the nerve-centres carbonic acid appears to act in much the same way as upon ferments: it first of all augments, and subsequently depresses their excitability.

ON THE REMOVAL OF SUGAR FROM THE ALIMENTARY CANAL.

We are still very ignorant concerning the fate of saccharine matter contained in the digestive tube—whether introduced into it as such, or generated by the decomposition of amylaceous compounds. Von Mering has carried out an elaborate series of experiments on the subject in the laboratory of Prof. Ludwig (*Dubois-Reymond's Archiv*, 1877, 4 and 5). The following are the principal results of his inquiry:—1. The lacteals take hardly any part in the absorption of sugar. 2. The lymph and chyle invariably contain sugar (independently of the kind of food taken (in approximately the same proportion as the serum of the blood. 3. The blood invariably contains a certain proportion of sugar, which is the same for all the vascular areas examined, and which is not diminished by starvation, even when this is carried far enough to deprive the liver of all its glycogen. 4. The portal blood alone may sometimes contain a larger amount of sugar during the digestion of carbo-hydrates; this excess being probably withdrawn from it during its passage through the liver.

ON DISTURBANCE OF THE CIRCULATION BY INCREASED INTRAPERICARDIAL PRESSURE.

By placing the pericardial sac of a dog, whose cervical cord had previously been divided, and whose respiration was maintained by artificial means, in communication with a reservoir of compressed air, François-Franck (*Gazette Hebdomadaire*, 1877, No. 29) was able to augment the intrapericardial pressure, either slowly or suddenly, to any extent desired. By means of suitable apparatus, the simultaneous alterations of tension in the arteries and veins, as well as the pulsations of the heart, were automatically recorded. A very gradual increase of pressure equivalent to 0·5 centimètre of mercury was not followed by any effect. When the pressure had risen to 1 centimètre the arterial tension began to fall without any change in the cardiac rhythm.

When it reached 1·5 centimètres, there occurred a great and rapid fall of arterial tension from the normal level to 8 or even 5 centimètres of mercury. The fall then continued, but very gradually, till the degree of arterial tension had reached 1·5 centimètres. As soon as the intrapericardial and arterial pressures had thus been equalised, the pulse in the arteries ceased to be perceptible. The ventricles continued to contract in the distended pericardium, but they no longer drove any blood into the great vessels. To elucidate the mechanism of these phenomena, a fresh set of experiments was undertaken. The excised heart of a tortoise, continuously supplied with a stream of defibrinated blood, was suspended in an air-tight glass vessel provided with two tubes, one of which was in communication with a mercurial manometer, the other with a pair of bellows. By injecting air into this vessel, any desired pressure could be brought to bear upon the surface of the heart. It was found that in proportion to the rise of pressure, the quantity of blood emitted by the heart in unit of time underwent diminution, the flow ceasing entirely when the pressure reached a certain point. The increasing pressure was observed to affect the relatively yielding walls of the auricles, which gradually collapsed and ceased to admit blood, the ventricle continuing its fruitless exertions and contracting on emptiness. These experiments throw light upon the circulatory disturbances caused by abundant pericardial effusions. The auricles are compressed, and the supply of blood to the ventricles is steadily diminished till, at last, it ceases altogether. The small, thready pulse, feeble impulse, distended veins, cyanosis, and œdema, are necessary consequences of this mechanical hindrance to the circulation which may at length attain a degree of severity incompatible with life.

THE REACTION OF NITROGEN AND WATER.

Berthelot, having had occasion to repeat the experiments on the formation of ammonium nitrite by means of the electrical discharge, now finds that absolutely pure nitrogen, when exposed in the concentric tubes, in contact with water, to the discharge of a very powerful Ruhmkorff apparatus for from eight to ten hours, yields ammonium nitrite beyond all question. The salt does not appear to be formed unless the discharge is a powerful one. With currents of low tension nitric acid is not formed in moist air. The formation of nitrates and nitrites in atmospheric air is assumed, therefore, to be due to the action of lightning (*Ann. Chim. Phys.* [5]

xii, 445). It must not, however, be forgotten that Zöller and Grete have reopened the enquiry whether ammonium nitrite is a product of the combustion of hydrogen in air, and the result of their experiments, conducted under most rigorous conditions, goes to show that during the combustion of absolutely pure hydrogen in perfectly pure air, small but distinct quantities of the nitrite are formed (*Ber. chem. Gesell.*, x, 2144).

PHYSIOLOGICAL ACTION OF QUININE.

According to N. Jerusalimsky, quinine given in small and medium doses (1 to 5 grains) always causes in dogs an increase in the frequency of the pulse. Just before death the pulse sinks rapidly. The blood-pressure in general has a tendency to fall after a brief period of increase; large doses (20 to 25 grains) cause the pressure to sink rapidly and diminish the pulse-frequency generally after a short acceleration. The acceleration of the pulse is the result of a depression or paralysis of the regulating and excitation of the excito-motor nervous system. The temporary increase of the blood-pressure with medium doses is due to paralysis of the regulating and stimulation of the vaso-motor apparatus. After the excitation of the vaso-motor centre, paralysis follows very rapidly, which affects the peripheral vessels, the excito-motor cardiac ganglia, and the cardiac muscles. After large doses the heart itself does not respond to direct stimulation. In man, Jerusalimsky, after a moderate dose (10 grains), observed acceleration of the pulse and increased heart-beat.

The respiration is always increased by small doses, slowed by large doses, and also rendered irregular with rapid-following asphyxia, owing to the effect of the drug on the respiratory centre. The hyperæmia and the hæmoptysis following large doses of quinine are probably due to paralysis of the vaso-motor centre. The author found the action of quinine on the temperature to be inconstant; he assumes the existence of a heat-exciting centre opposite the second dorsal vertebra, and a heat regulating centre between the sixth cervical and first dorsal vertebræ, and he explains the modification in temperature by the relation of quinine to those two centres; thus, increase after large doses would be produced by paralysis of the regulating centre.

The rapidity of the blood-current is much slowed by quinine, owing to the paralysis of the vaso-motor centre. Jerusalimsky confirms the statements of Binz relative to the effect of quinine on the white blood-corpuscles; he also ob-

served the cessation of the amœboid movements, and the emigration and diminution in the number of these bodies. He also observed that the corpuscles which had emigrated had for the most part a single nucleus, whilst previously the greater number were multi-nucleated. Like Manassein, he observed that the red blood-corpuscles became larger under the influence of quinine. Confirming Mosler, he observed a diminution in the size of the spleen, the organ becoming at the same time tougher, granulated on the surface, and of a brighter colour. This depends primarily on the effect of the alkaloid on the peripheral, nervous, and muscular elements of the spleen; and, secondarily, on the splanchnic and central nervous system.—Abstract in *Centralblatt für die Med. Wiss.*

Translations.

OF THERMOMETRY IN OUR DOMESTICATED ANIMALS.

By Auguste Zundel, Vet. Sup. d'Alsace Loraine à Strasbourg; from the 'Recueil de Médecine Vétérinaire.'

Translated by J. H. STEEL, Demonstrator of Anatomy, R.V.C.

The importance which the exact study of the internal temperature of the animal body has assumed during the last few years as affecting diseased conditions causes us to here summarise the information acquired on this point. Although (as occurs in connection with every novelty) we may consider that the application of thermometry to everyday practice has assumed exaggerated proportions, nevertheless we must allow that it has an incontestable value in a number of circumstances, and that it has furnished numerous scientific results which have elucidated many questions which before obscured physiological pathology. It is allowed that it was a doctor of Venice, Sanctorius (died 1638), who first utilized the thermometer to ascertain the animal temperature; later, Boerhaave, Van Swieten, and, above all, De Haen, acknowledged the value of thermometric calculations in disease. In the first half of this age the application of this means was studied especially by Chossat, Donné, Gavarret, Andral, Traube, Helmholtz, Baerensprung. But it was after the important communication of M. Claude Bernard to the Academy of Sciences in 1852 regarding the influence of section of the great sympathetic upon heat generation that researches were pursued with ardour, especially by the Germans. M. Wunderlich has made thermometry the subject of numerous publications, as also have Messrs. Liebermeister, Thomas, Marey, Hirtz, Sée, Da Costa, Alvarenga,

Woillez, &c. In veterinary surgery the matter has been taken up by Messrs. Bassi, Schmelz, Schmidt, Adam, Gerlach, Zangzer, Leisering, Stockflette, Rueff, Sanderson, Colin, Zundel, Pflug, Lydtin, Bayer, Anaker, Siedamgrotski, &c. It is to these different observers we owe what follows; but before occupying ourselves concerning the facts thus furnished, we ought summarily to review the most essential physiological facts which are related to the production of animal heat. It is now established that the temperature of the animal body is due to slow oxydations resulting from absorption of the oxygen of the air, and that the appreciable temperature represents free caloric produced in excess. The lungs serve to give the oxygen free access to the organs which are directly concerned in the production of heat. The circulatory apparatus serves to evenly diffuse the temperature over the different parts of the body, and lastly, the living nervous system is the regulator of the animal heat by its action upon the circulatory apparatus. As M. Sée reminds us, when the atmospheric temperature is below zero, under the influence of the ruling nervous system there is produced by the impression of cold an excitation of the peripheries of the vascular nerves, and consequently a contraction of the superficial vessels, the blood arriving in smaller quantity at the periphery and hence at contact with cold air there is less loss of heat than under usual conditions, and the temperature of the individual remains at the normal. At a very elevated temperature of the air the body still preserves the same degree of heat, but in consequence of conditions the reverse of the preceding. There is then an enormous loss of heat by the means which in the above case confines the heat, for the blood-vessels dilate, more blood arrives at the periphery; there is produced a great loss of heat by the contact of blood with the surrounding air.

The temperature of the body is very variable according to the species; whilst in man it is 37·5° C. (99·5° F.), it is more elevated in all our domesticated animals. In the horse it is 38·25° C. (100·85° F.), but can even in health range from 37·6° C. (99·68° F.) to 38·75° (101·75° F.). In the ox it is 39° (102·2° F.); in the sheep 40·25° (104·4° F.); in the pig, 40·50° (104·9° F.); in the dog, 38·50° (101·3° F.); in the cat, 38° (100·4° F.). It is not necessary to attach exact significance to these estimates, as authors slightly differ in this matter; thus, Fleming gives high estimates, Gurt and Siedamgrotzki give medium, and Krabbe gives low estimates. We cannot give any reason for this.

The clinical thermometer has for its aim the manifestation, as exactly as possible, of the changes which occur in the

temperature of the animal body during the progress of disease, and to thus furnish to the practitioner indications useful for diagnosis, and for treatment in cases where the other means prove insufficient. M. Schmelz considers also that the thermometer is important in estimation of the progress of an attack of disease and for confirmation of diagnostics afforded by percussion and auscultation. The heat of the body is that of the blood, of which the physical and chemical composition depends upon the general state of the constitution. Thermometry gives indications of an exact nature of that general state.

Examination of the temperature by means of the thermometer is not recommended in every case where the temperature is modified; such a proof as it affords is only useful in certain cases, as we shall see, for it seems to us that we can sufficiently appreciate fever by ordinary means in most of the cases which occur in practice, and that the enthusiasm aroused by the important discoveries of physiological pathology due to the study of the temperature has gone too far to supplant the use of the pulse and of examination with the hand of the condition of the skin, as a means of judging the febrile state. Although we may think thus, we ought not wholly to despise the employment of the most exact means of estimating the temperature, the thermometer; it is to us, in ascertaining the normal or morbid heat, what the watch is in determining the frequency of the pulse.

We will not describe the thermometers which have been considered the most convenient for clinical thermometry; many kinds have been constructed with alcohol and mercury, all having each degree divided into ten parts, and being graduated only between 35° to 45° (95° F. to 113° F.), or some from 30° to 50° (86° F. to 122°F.); a great degree of susceptibility has been conferred upon the instrument by giving it a small reservoir easily warmed and a very fine bore; the most convenient are maximum thermometers.

The thermometer, in our patients, is almost always placed in the rectum, so that the reservoir is about 1 decimètre (nearly 4 inches) deep; it is necessary to leave it there for about ten minutes. The indication of temperature should be read while carefully withdrawing the instrument. The thermometer should touch the intestinal walls and not be placed in the middle of the mass of excrements, since they prevent it from taking the temperature of the part sufficiently rapidly. M. Billroth shows that if the introduction of the thermometer causes extraordinary contraction of the anus, if there is any local irritation, the indication is inexact. It is sometimes proposed in females to introduce the thermometer into the vagina; that would be more convenient, but the temperature of this organ is always different

from that of the rectum, as much lower as 0·2° to 0·5° (0·36° F. to 0·90° F.) (Bayer), and even as 0·1° (1·8° F.) (Gerlach), in consequence of the easy access of the external air; as much raised as 0·1° to 0·3 (0·18° F. to 0·54° F.) (Brusasco, Rueff, Anacker) in consequence of the neighbourhood of a fœtus. Also as a question of scientific basis, all researches with the thermometer should be made in the same position, in order to be able to compare results obtained. It is better to always place the thermometer in the rectum, as human practitioners always place it in the axilla.

It must not be forgotten, if the thermometer has been used in some infectious malady, as charbon, septicæmia, &c., to subject it to disinfection, that it may not be the agent of contagion before such has occurred. Observations should be made daily, or every morning and evening, as much at the same hour as possible. Not only have the exact indications, which it affords tended to bring thermometry into common use, but also the "graphic traces," which have been ingeniously devised as a means of registering these results; these show clearly all the phases of the temperature during the progress of the attack. The practitioner can very well, except in chest diseases, trace at the same time the indications of the pulse and of the respiration, in order to thus have an exact record of their alterations and in order to be able to compare them.

In order to judge with precision, it is necessary to take into account the influence of accessory conditions which may sensibly modify the temperature. In young animals the febrile temperature scarcely exceeds that of adults but the oscillations are quicker. The normal temperature of a young animal, other conditions equal, is always 0·5° (0·9° F.) above the mean, and of an old animal 0·5° (0·9° F.) below. It is the same with the female compared with the male. The temperature of the mare and of the cow is always 0·5° (0·9°) above that of the entire horse and of the bull; it is the same with the sheep. Digestion assists to elevate the temperature; it is advisable to take observations as little as possible during the time when it is progressing. Certain medicinal agents modify the temperature during a longer or shorter time, as we shall see. Violent pain can disturb the temperature of the patient. Wounded conditions, whether accidental or the result of an operation, produce a fall of the temperature. A loss of blood produces fall of temperature, if it is copious, but soon after an appreciable rise occurs. It is necessary in cases of anæmia to make an allowance of 2° (3·6° F.). We may believe that muscular exertion ought to much increase the temperature appreciable by the aid of the thermometer, but it appears that the variation from the normal condition during

rest, is but little marked. Thus, MM. Siedamgrotzki and Peters prove that a fairly long trot or gallop was required to produce an increase of 0·9° (1·62° F.), in the horse. During sweating the temperature is ordinarily raised 1·2° (2·16° F.). After removal of the coat in the horse and in the sheep there is always an augmentation of the general temperature by 0·5° (0·9° F.), or even sometimes 0·8° (1·44° F.). Coverings reduce that temperature, and impermeable coverings of pitch and of other combustible matters can induce a reduction of 3·5° (6·3° F.) ; even much lower. If we produce cutaneous asphyxia as did Fourcault, Bouley, Edenhurzgen, and Gerlach in their experiments, we can produce a reduction of 14°, or even of 15° (25·2° F. or 27° F.). The moment of death is always accompanied by a change in the temperature of the animal body; generally there is a marked decrease, but nevertheless we sometimes observe an increase exceeding much the maximum observed in living animals. This proves that the losses of heat are less than during life, whilst there is no more pulmonary and cutaneous exhalation, nor secretion, and that the phenomenon of putrid decomposition is also a source of heat. A body which assumes rigor mortis slowly loses less, or at least produces more, heat than one which stiffens rapidly. The body of an animal which has been greatly fatigued before death, which has "been a long time dying," stiffens only slowly, and we find in it an increase of temperature, and we know that the flesh of such does not keep well, but easily decomposes.

There is always in the temperature of the body that which Chossat terms "diurnal oscillation," which implies that the temperature is not the same in the evening as in the morning. In the morning the temperature is always a little lower than in he evening, and according to Gerlach and Rueff that difference varies from 0·1° to 1° (0·18° F. to 1.8° F.). Brusasco states that in our larger patients the maximum of temperature it observable about 8 p.m. and the minimum at 7 a.m. Under disease the temperature may increase in our patients 2° or 3° (3·6° F. or 9·4° F.), rarely more. It is allowed that as soon as there is an increase of 5° (9° F.), it is an unfavorable prognostic; that elevated temperature, so to speak, burns up the sick animal. The diminution is scarcely more marked; a fall of from 8° to 10° (14·4 F. to 18° F.), is a sign of death. The temperature is increased in inflammations, and that augmentation is in direct proportion to the degree of inflammatory fever; the augmentation ceases and persists as soon as the disease is pronounced and fixed. It is in pneumonia that the augmentation is especially perceptible; towards the end of the second day the temperature has obtained an elevation of 3° (5·4° F.),

by gradual increase, and it remains at this height, not being influenced by diurnal oscillation until the disease enters its terminal stage, which is accompanied by a very sharp fall of temperature. The temperature remains a little below the average during the whole stage of resolution. Death does not always ensue with elevation of temperature, for sometimes it occurs with the maximum and sometimes with the sudden and rapid loss of temperature. Bayer states that in pleurisy the "trace" is little different from that of pneumonia. When the effusion tends to become chronic (in the horse) the thermometer rests at 39° (102·2° F.). In articular rheumatism the increase is about 2° (Harms). When any inflammatory malady whatsoever tends towards cure the temperature falls gradually at the rate of about 1° (1·8° F.) in twelve or twenty-four hours; when the heat falls suddenly, by a sort of collapse, the animal is in great danger.

It is proved of the elevation of temperature in all fevers that the increase is great, some hours sufficing to produce an elevation of nearly 4° (7·2° F.); then the temperature is as quick in falling.

We have but little applied thermometry to the study of typhoid diseases of the horse; we know but little on this subject save the observations of Schmidt, Adam, and Stratthaus; nevertheless observations of temperature furnish us with valuable indications for diagnosis, prognosis, and treatment. The temperature gives an exact measure of the general state of the system, and so, for example, in spite of some very dangerous symptoms which prostration produces, if the temperature remains moderate there is always ground for hope. In the course of typhoid affections the frequency of the pulse generally is proportioned to the temperature, but not always and completely; not only do we often observe a fall of the temperature accompanied by very rapid pulse, but there are some few cases in which the pulse is slow but the temperature high. In typhoid affections there is sometimes gradual augmentation during three or four days, in other cases towards the close an augmentation of 1° or 2° (1·8° F. or 3·6° F.). There is always a loss from evening to morning of 0·5° to 0·8 (0·9° F. to 1·44 F.). From the first condition there results an ascending trace, "like a stair;" from the second the curved trace is high towards its termination. The thermometer rises thus as high as 41° or 42° (105·8° F. to 107·6° F.), and M. Adam has even seen it rise to 43·75° (110·75° F.); M. Stratthaus has seen horses recover after a rise to 41·7° (107·06° F.), whilst 41·8° to 42° (107·24° F. to 107·6° F.) generally proved fatal. The trace remains for a longer or shorter time at that high reading, continuing its daily oscillations of from 0·5 to 0·8 (0·9° F.

to 1·44° F.) from evening to morning; nevertheless, under the influence of energetic and rational treatment it immediately descends, and the diurnal oscillations are less marked. After some days, according to the particular case, the thermometer gradually descends, still in a "staircase" manner towards the normal, evening exacerbations, and morning remissions being always appreciable; or the fall may be slower, and if the rise in the evening is very marked the morning falls may also be very marked, the curves of the trace are sharp; the normal temperature even may be seen in the morning, while in the evening the reading is very high. Little by little the temperature diminishes, the variations disappear, and a complete state of apyrexia establishes itself. A reduction of 1° (1·8° F.) per diem after the period of elevation is a favorable sign, which precedes all the other symptoms of improvement. A fall of the temperature without amelioration of the other symptoms is a bad sign; often it indicates some internal hæmorrhage; or severe diarrhœa, suddenly setting in, may exercise a depressing influence, but this is less marked. If the fall is extreme, and we have seen it fall to 35° (96° F.), it indicates septicæmia, gangrene of the lungs or of the intestines, and approaching death. If, nevertheless, the temperature at one time fallen suddenly rises, it is still a bad sign. A rapid increase of temperature in these typhoid affections is always a bad symptom; we can often trace that elevation to appreciable local complications and to relapses (*récidives*). At the approach of death, in many cases, the temperature rises continuously to 43° (109·4° F.); in other cases a loss of heat occurs, sometimes rapid, sometimes extending over many days.

In all fevers temperatures of 40° to 42° (105·8° F. to 107·6° F.) have an unfavorable significance when they persist for a long time, and when they remain uniform during morning and evening; when interrupted by morning remissions high temperatures can be withstood for a long time. All extreme temperatures are unfavorable; an animal cannot for a long time support a temperature above the normal, and that temperature destroys the animal as much as the "wear and tear" produced by the fever. Peters has observed the rise in "sheep-pox;" often in that disease the rise is irregular, "jerking," with alternations of rise and fall, until the time when it attains the maximum.

Eruptive fevers are accompanied by an elevation of temperature; this has been particularly noted in "foot-and-mouth disease," in which Rueff, Stockfleth, and (especially) Brusasco, have noted for some days a temperature of 41° and 42° (105·8 F.° and 107·6° F.), which persists for three or four days until the eruption ceases, to fall quickly if there is not much pain in the feet.

In the case of cattle plague there is always high elevation of temperature, which, according to Gerlach, reaches 43·2° (109·76° F.), but generally mounts to 41° and 42° (105·8° F. and 107·6° F.); the severity of the disease is related to the elevation of temperature. As Anderson, Gamgee, Gerlach, Boulay, Chauveau, and Wehenkel have proved, this augmentation of temperature precedes the development of other symptoms of the disease by one or one and a half days. We have seen at Dorpat, in inoculated animals, an increase as early as thirty-six and forty-eight hours after operation, whilst the fever, truly so called, does not occur before two days; the value of this point in practice will be appreciated. Thus, the increase in cattle plague is rapid, so that during the first day it reaches the maximum where it rests for some time, about two or three days, afterwards, descending and again resting at a little below the mean. A slight daily increase is an unfavorable sign; a sudden fall indicates imminent death, collapse. We see sometimes what M. Gerlach has termed "relapses" (*des récidives*), when, in the course of the attack, the thermometer suddenly rises to the height it had during the first days. Few diseases give such strange tracings as cattle plague.

If the increased temperature remains for a long time thus abnormal it is a bad sign, even though the other symptoms indicate improvement. Leibermeister states that in all serious infectious diseases or in those where the blood is altered there is this abnormal and persistent elevation of the temperature of the body. In charbonaceous affections there has always been found a very sensible augmentation, and the thermometer is at 41·4° (105·8° F.), sometimes at 41·7° (107·06° F.). It decreases rapidly at the time of death; Brussaco has even observed 42·6° (108·68° F.). In erysipelas of the pig the temperature is 40° and 41° (104° F. 105·8°). Gerlach has seen 43·1° (109·58° F.) an hour before death, and Harms even speaks of 43·4° (110·84° F.). In acute glanders Brusaco has shown oscillations between 41° and 42° (105·8° F. and 107·6° F.). Septic infection, gangrene of the tissues, is characterised by great increase of temperature, in the horre even to 41·9° (107·42° F.). If, in an animal operated upon, where pain ought not to cause an increase of more than 1° (1·8° F.), the thermometer suddenly indicates an increase of 2° or 3° (3·6° F. or 5·4° F.), there is reason to fear septic infection; it is advisable, then, to seek the cause of this infection. In vitulary fever (parturient apoplexy), which we consider as a septic infection, there is also an increase of the temperature, which rises as high as 41° (105·8° F.); but there is a "collapsus," very sudden fall, when the case is fatal. There is a fall in the temperature in non-febrile cachectic affections, notably in dropsy;

in a case of peritonitis accompanied by ascites and chronic indigestion in a cow M. Kuhr has seen the thermometer at 37·25° (99·05° F.); in a case of pericarditis in the dog Siedamgrotski has seen the temperature fall some time before death to 35° (95° F.). In subacute enteritis there is in the horse a reduction of 1° to 1·5° (1·8° F. to 2·7° F.). In serious jaundice of the dog Siedamgrotski has shown that the thermometer falls from 38° to 34° or 35° (100·4° F. to 93·2° F. or 95° F.) at the time of death; once it even fell to 32° (89·6° F.). In consequence of copious evacuations, vomitions, serious hæmorrhages, in inanition, in fact in every case where the vital force is diminished, there is more or less marked fall of temperature. When in a chronic affection there is a rise in the temperature there is inflammatory complication; generally that increase is inconsiderable, and always augments towards evening. In cases of phthisis especially we find that critical increase.

The absence of circulation in a part produces a reduction of 5°, 8°, and 10° (9° F., 14·4° F., and 18° F.), which is not detectible by the thermometer at the anus, but by the means of thermographs. Paralysis of a part also is accompanied by a reduction of temperature, which may amount to 1·5° and 2° (2·7° and 3·6° F.). The thermometer has a true diagnostic value in cerebrospinal affections; above all, to distinguish encephalitis resulting from chronic congestion, from "immobility" ("shivering"). In the former we see the thermometer rise to 40° (104° F. or 105·8° F.), or even 41°; in the latter it remains at the mean. It has often been said that tetanus is accompanied always by increase of the general temperature; there is none. Bayer has seen it remain for a long time almost normal for as long as the attack is uncomplicated. It is only when the disease tends towards a fatal issue that we see a sudden increase which exceeds even the temperature which we find in other diseases; often on the eve of death we find still 39° (102·2° F.), then the thermometer rises to 41·2° (106·16° F.), and then immediately at the time of death to 44° (111·2° F.). After death this increase continues, and Bayer has seen it 45·5° (113·9° F.). Similar observations have been made by M. Trasbot. That rapid increase in the case of tetanus is a prognostic we must not neglect. We ourselves have made use of the thermometer in cases of abdominal pain to distinguish cases due to inflammation, when it is advisable to bleed, from cases of atony of the digestive tract, or cases of congestion caused by embolism of the mesenteric arteries, in which stimulants are required. While in the first case the thermometer marks 40° (104° F.), it often falls below the normal in the others, and marks 37°, even sometimes 36° (98·6° F. and 96·8° F.); in

the latter case the animal is anxious, recumbent, and does not give way to irregular movements. If, then, there is a sudden elevation of temperature, it is a sign of gangrene. Internal strangulated hernia is always accompanied by a low temperature of the body, and the degree of fall is directly proportioned to the amount of bowel involved. Abundant draughts of fresh water, washings, and cold water affusions produce a fall of the general temperature, which may amount to 2° or 3° (3·6° F. or 5·4° F.), but soon after a reaction occurs, which brings about an increase of the temperature. Alkaline substances, nitre, sulphate of soda, diminish the temperature of the body; the same result follows the use of dilute acids (acidules); but the most energetic effect results from sedatives, as the salts of lead, tartar emetic (*l'émétique*), hellebore, and above all, digitalis. Alcohol in small doses acts as an excitant, and produces a rise of the temperature; in large doses, on the contrary, it produces a fall. Narcotics, above all anæsthetics, produce a diminution of the general temperature, and the same result follows large doses of the carbolic and salicylic acids (Stratthaus).

If there were a constant relation between the frequency of the pulse and the elevation of the internal temperature, thermometry would be absolutely useless in enabling us to estimate fever, and the beats of the pulse should suffice. It is not so. With a great frequency of the pulse there is sometimes no fever, and the heat at the anus remains normal. On the other hand, with an increase of the temperature, persistent at 40° or 41° (104° F. or 105·8° F.) the pulse presents variations in the same individual which are not in accordance with those of the temperature, and which are from 70 to 80 pulsations per minute. Thus, Adam reports a case of typhoid fever in the horse, in which, with a temperature of 41° to 42° (105·8° F. to 107·6° F.), the pulse was found to vary from 60 to 80 or 90 pulsations on the tenth day. Schmidt and Adam allow that the want of agreement of the temperature with the state of the pulse is a sign of serious disease, and that generally these cases terminate fatally.

Everything tends to the belief that fever and increase of temperature are one and the same thing, that it is the initial phenomenon in diseases, that it occurs prior to local lesions, that it results from increased activity of the combustion of the components of the blood in the depths of the tissues, and that its appearance and its modifications point to a primary cause having its seat in the nervous system. According to MM. Coze and Felz there is an exact relation between the amount of urea produced and the temperature of the body.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

EXTRACTS FROM THE REPORT OF THE COUNCIL.

MONTHLY MEETING, Wednesday, May 1st, 1878.—Colonel Kingscote, C.B., M.P., President, in the chair.

CHEMICAL.

Mr. Wells (Chairman) reported that the committee had received a communication from Dr. Voelcker with reference to the Woburn experiments, and the appointment of a superintendent at Crawley Farm.

In consequence of the favorable opinion expressed by Dr. Voelcker, the committee, under the power given them by the Council in March, had decided to appoint Mr. Malden, jun., to be superintendent at Crawley farm. The Woburn sub-committee had reported that they had made arrangements for the cropping and cultivation of certain fields on the Crawley Farm, and that Mr. Charles Howard and Dr. Voelcker went over the farm, with Mr. Malden, jun., and his father, to give the former an insight into his future duties. Mr. Lawes having expressed a wish that the experimental field should be inspected by the committee before his resignation of his joint superintendence, it was proposed that on Saturday, June 1st, a visit of inspection be paid, in which any members of the committee were requested to join. The committee had received some suggestions from their surveyor for modifying the plans and arrangements for a new laboratory, but before coming to any decision on the subject they recommended that the secretary communicate the fact of the proposed scheme to Lord Harewood, and offer to give any explanation of the plans to him or his surveyor. This report was adopted.

METROPOLITAN SITES.

Professor Simonds reported that the committee had had an interview with Messrs. Cluttons, who are agents to the Ecclesiastical Commissioners, with reference to the proposed acquisition of a piece of land at Brondesbury, as a site for the Metropolitan Exhibition next year. The site comprises ninety-one acres, and it is bounded on the north by the North London Railway, on the south by the London and North-Western main line, on the east by a road now in process of construction (which will soon form a direct line from Edgware Road to Kilburn Lane, and eventually to the Harrow Road), and on the west by a road leading from the Harrow Road to Kensal Green station on the North London line. To secure easy access to the site from the Kensal Green station it will be necessary to rent a field, 8¼ acres in extent, in addition to the site itself. The Salisbury Road station, on the North Western Railway, is also nearly contiguous to the site on the opposite side. The committee recommended

that, subject to the sanction of the Ecclesiastical Commissioners, the secretary be empowered to enter into an agreement (to be prepared by the Society's solicitors) with Messrs. Cluttons for the use of the land just mentioned.

This report was adopted, after a conversation as to the cost of the site and other additional expenses to the Society, which the metropolitan meeting will involve, being recouped by the subscriptions now being raised by the Mansion House Committee.

Education.

Mr. Dent (Chairman) reported that six candidates had presented themselves for examination for the Society's senior prizes and certificates. Of these, Mr. James Mollison, the only one who passed, is entitled to a first-class certificate, the life membership of the Society, and the first prize of £25.

The examiner in agriculture (*Mr. Charles Howard*) reported that the whole of the papers were highly creditable, four of them being most excellent, and reflecting great credit upon the training of the candidates. The *vivâ voce* examination was most satisfactory with all the candidates. He particularly mentioned Mr. Mollison, who, although he did not answer some of the questions in his paper, was found upon examination to be well acquainted with the subject, and had he answered all the questions in the same style he would have commanded a very high position. Although the Society might be congratulated upon the general excellence of the candidates of this year, it was somewhat discouraging that so many of the young men who are being trained to agricultural pursuits should neglect so fine an opportunity of distinguishing themselves by competing for the Society's prizes and certificates.

The examiners in chemistry (*Professor Liveing* and *Dr. Voelcker*) reported that the candidates had not done well in this examination as a whole. The failure of the candidates, except Mollison, in general chemistry, was conspicuous, and they had not made up for their deficiency in this respect by much proficiency in the more technical part of the subject.

Professor Twisden, the examiner in mensuration and surveying, and in mechanics and natural philosophy, reported that all the candidates obtained the qualifying *minimum* in the former subject, but only two in the latter. This could not be regarded as a satisfactory result, but it was rendered necessary by the sort of answers that were sent in. Every question was attempted, and for the most part by all the candidates; but the answers were only partial, and often incorrect. The omissions were the more numerous in the paper on mechanics and natural philosophy, but the failures in it were due not to omissions, but to the inaccuracy of the answers that were sent in. However, Mr. Mollison's answers were fairly good, and showed a certain acquaintance with the elementary parts of the subject, and some of Mr. Ruzo's answers were accurate and clearly expressed.

The examiner in botany (*Mr. Carruthers*) reported that the papers were not very satisfactory, the two candidates who passed not having secured very high marks.

Professor Simonds (the examiner in anatomy) reported that not one of the candidates had obtained anything like the number of marks constituting the pass number. This was certainly surprising, considering that the questions were by no means difficult ones; and indeed they were, in his opinion, much too simple.

Professor Morris (the examiner in geology) reported that of the four candidates who presented themselves for examination, three might be considered to have passed satisfactorily, the answers generally indicating a fair knowledge of the subjects. With regard to the practical knowledge of the *specimens* submitted to them, they were not quite so successful.

Selection.

Earl Cathcart (Chairman) reported the recommendation of the Selection Committee that H.R.H. the Prince of Wales be recommended to the general meeting, on May 22nd, as president of the Society for the ensuing year, and that the president (Col. Kingcote, M.P.) be requested to communicate with H.R.H. in reference to the recommendation. The resignation of Sir Richard Musgrave from the Council, and therefore as a steward of live stock, was received and accepted; and Mr. Whitehead was recommended as steward of live stock in his place. The committee recommended that Professor G. T. Brown and Dr. Burdon Sanderson, F.R.S., be elected honorary members of the Society, in recognition of their eminent services to veterinary science.

This report was adopted.

On the motion of *Mr. Dent*, seconded by *Mr. Bowly*, it was decided to hold the country meeting for the year 1878 in the County of Middlesex. It was also resolved that the country meeting for the year 1880 should be held in the district comprising the counties of Northumberland, Durham, Cumberland, add Westmoreland.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL GENERAL MEETING HELD MAY 6TH, 1878.

The thirty-fifth annual meeting of the members politic and corporate of the Royal College of Veterinary Surgeons was held by advertisement, and in accordance with the provisions of the Charter, on the first Monday in the month of May, being the 6th day thereof, 1878, at the College, 10, Red Lion Square, Holborn, London.

Present.—Gen. Sir Frederick Fitzwygram, Bart., President in the Chair; Professors Pritchard, McCall, and Axe; James Collins, Esq., Principal Veterinary Surgeon to the Army; Messrs. J. D. Barford, T. G. Batt, F. Blakeway, J. C. Broad, James Broad, jun., James H. Brown, G. Carless, B. Cartledge, H. J. Cartwright, W. Cawthorn, M. Clarke, A. R. Charles, J. Roalfe Cox, J. B. Daniel, E. M. Davy, E. C. Dray, T. J. W. Dollar, G. A. Drewe, J. C. Dwyer, H. Dyer, W. Duguid, W. Fearnley, G. Fleming, W. Furnival, J. F. Gillingham, D. Gibbon, T. W. Gowing, T. W. Gowing, jun., T. Greaves, T. P. Gudgin, M. J. Harpley, W. Helmore, T. Hopkin, J. Howard, C. Hunting, W. Hunting, R. L. Hunt, H. C. Legge, G. A. Lepper, J. Macinder, A. J. Milne, James Moon, James Moore, T. Moore, M. E. Naylor, A. J. Owles, J. Oliphant, W. F. Peacock, C. Percival, E. M. Perry, I. Print, J. Rowe, F. G. Samson, C. C. Sanderson, H. K. Shaw, W. Smith, W. A. South, T. J. Symonds, P. Taylor, R. Ward, C. J. Whitworth, G. Williams, W. Wilson, Joseph Woodger, E. Woodger, Joseph Woodger, jun., F. W. Wrag, and the Secretary.

The *Secretary* read the notice convening the meeting; also the minutes of the previous meeting which were confirmed.

The following gentlemen were appointed as scrutineers:—Messrs. Percival, Symonds, Hopkin, Ward, W. A. South, and T. J. W. Dollar.

The annual report was then read.

The Annual General Meeting of the Royal College of Veterinary Surgeons was held May 7th, 1877, in accordance with the provisions of the Supplemental Charter, when the following gentlemen were elected members of Council in the place of those who retired by rotation, viz.:—Peter Taylor, John Cuthbert, Richard Sam. Reynolds, Francis Blakeway, Benjamin Cartledge, and Matthew John Harpley.

The Council of the Royal College of Veterinary Surgeons have to report that at their first Meeting, held May 29th, General Sir F. Fitzwygram, Bart., was unanimously re-elected President, and the following gentlemen were elected Vice-presidents:—Messrs. S. H. Withers, Josh. Woodger, junr., H. J. Cartwright, Jas. McCall, T. Walley, and Wm. Smith, Mr. S. H. Withers, Treasurer; and Mr. W. H. Coates, Secretary.

The Council having elected their office-bearers, a Special Meeting was convened to receive the report from the Committee appointed to investigate the finances of the College.

The Committee thought it would not be advisable to attempt to increase the funds of the College by any material

increase of the Examination Fees (which are the only source of income), especially after the tax lately laid on rejected students.

They therefore recommended a scheme for reducing the expenditure, so as to bring the expenditure within the income.

With this view they recommended that the practice of advertising the Examinations in the public newspapers should be discontinued.

That no more than two Examinations be held in the year.

That the number examined at each meeting of the Court be increased from nine to twelve.

That in case of broken numbers of students, *i. e.* less than twelve, the Examiners should be requested to examine any number not exceeding four, on receiving a proportionate increase on the fee for the evening.

That the time given for the Examination of each student should be reduced from twenty minutes to fifteen minutes.

That the fee paid by the students on the third Examination should be increased from three to four guineas.

The Council after taking into their most careful consideration the proposals of the Committee, resolved to adopt them; but some opposition having been raised to the recommendation, that no more than two Examinations be held in the year, it was deemed advisable that the subject should be postponed for further discussion.

The Council next proceeded to the election of a New Board of Examiners. Notice having been given to the former Court to tender their resignation, on account of the re-constitution required by the new Bye-laws.

The following are the list of Examiners who were elected for the several tables at the respective Examinations.

First Examination.

CHEMISTRY AND TOXICOLOGY.

England.	*Scotland.*
DR. A. VOELCKER.	DR. ALEX. CRUM-BROWN.

(To examine 12 Students.)

MATERIA MEDICA AND PHARMACY.

PROFESSOR DUGUID.	DR. JAMES DUNSMURE.

BOTANY.

PROFESSOR BENTLEY.	DR. ALEX. DICKSON.

Second Examination.

PHYSIOLOGY AND HISTOLOGY.

England.	*Scotland.*
DR. J. BURDON-SANDERSON.	PROFESSOR TURNER.

(To examine 9 Students.)

ANATOMY.

MR. GEORGE FLEMING.	MR. WILLIAM ROBERTSON.
„ WILLIAM ROBERTSON.	„ GEORGE FLEMING.

Third or Final Examination.

MORBID ANATOMY, PATHOLOGY, AND PATHOLOGICAL TOXICOLOGY.

MR. GEORGE FLEMING.	MR. GEORGE FLEMING.

(To examine 12 Students.)

DISEASES OF THE HORSE, VETERINARY MEDICINE, SURGERY AND THERAPEUTICS.

MR. M. J. HARPLEY.	MR. B. CARTLEDGE.
„ WILLIAM ROBERTSON.	„ M. J. HARPLEY.

PRACTICAL.

MR. M. J. HARPLEY.	MR. B. CARTLEDGE.
„ WILLIAM ROBERTSON.	„ M. J. HARPLEY.

DISEASES OF THE OTHER DOMESTICATED ANIMALS, VETERINARY MEDICINE SURGERY, AND THERAPEUTICS.

MR. T. W. MAYER.	MR. ALEX. ROBINSON.
„ R. L. HUNT.	„ R. L. HUNT.

PRACTICAL.

MR. T. W. MAYER.	MR. ALEX. ROBINSON.
„ R. L. HUNT.	„ R. L. HUNT.

The Council have deemed it advisable to extend the period of Examination for those students who entered under the Old Rules for the two years period of study, which was to expire at Christmas 1878, and is now extended to July 1879.

The Examiners under the new system have expressed their satisfaction at the marked improvement exhibited by those who have been submitted to the more severe educational test which is now required by the new regulations.

The Council have also had under consideration the suspension of "Bye-laws 32 and 33" for a period of three years, in order to enable gentlemen who have held the Highland and Agricultural Society's certificates for three years to obtain the diploma of the Royal College of Veterinary Surgeons by passing a second and third Examination at one and the same time on payment of full fees, and that those who have obtained their certificate more recently, but prior to December 31st, 1877, shall be required to pass all three examinations at one and the same time, on payment of full fees.

This subject is still under the consideration of the Council.

The Council have to report that since the last Annual Meeting seventy-one students from the different veterinary schools have received the diploma of the Royal College of Veterinary Surgeons.

The following students obtained Honorable Mention, viz. :—Messrs. Harold Leeney, Alfred Joseph Sewell, Frederick Robert Stevens, and John Richard Carless (Royal Veterinary College), with very Great Credit; also Messrs. John Herbert Callow, George Reed Dudgeon, Edward Miles Perry, and James Broad (Royal Veterinary College), Thomas John Watt Dollar, Peter James, Combe (Edinburgh Veterinary College), and David Crabb (New Veterinary College, Edinburgh), with Great Credit.

The election of a Board of Examiners for the Fellowship Degree was considered by the Council.

It was thought desirable that the Examiners should be Members of the profession and also Fellows and be elected for one year only. On the Ballot being taken :

Professor Williams, Messrs. Fleming, Harpley, and Robertson, were declared duly elected.

Two Special Examinations for the Fellowship Degree were held on July 7th, 1877, and January 12th, 1878, when the following gentlemen passed their Examinations, and were admitted Fellows of the Royal College of Veterinary Surgeons.

Mr. Richard Poyser, 6th Dragoon Guards, Colchester.
„ William Hunting, Down Street, London.
„ Tedbar Hopkin, Strangeways, Manchester.
„ William Augustus Taylor, Turner Street, Manchester.
„ Thomas Briggs, Prestwich, Manchester.
„ Arthur Henry Santy, Norwich.
„ William Duguid, "Brown Institution," London.
„ Robert Ward, Woking, Surrey.
„ John Woodroffe Hill, Wolverhampton.
„ Harry Olver, Tamworth.
„ Joseph Mackinder, Peterborough.
„ Charles Edward Challinor, Pendlebury, Manchester.

The Council have now under consideration the following Amendments in Bye-law 50, having reference to the preliminary examination required of Candidates for the Fellowship Degree.

The following is the proposed Amended Bye-law.

"Each candidate other than a Professor or ex-Professor at a school affiliated with the Royal College of Veterinary Surgeons, or gentlemen who have passed the Civil Service or Army Examination held by the Civil Service Commissioners will be required to produce a Certificate of Graduation in Arts at a University to be recognised for this purpose by the Council, or after an Examination by the College of Precep-

tors on subjects to be fixed from time to time by the Council."

Prizes.

The Fitzwygram Prizes. The number of competitors for these prizes in 1877 was not so large as on the preceding year. The *vivâ voce* and practical Examination took place in London. The only candidates who obtained the required number of marks were from the Royal Veterinary College. Of these only two were successful, viz.:

Mr. Richard Glover, First Prize	£50
Mr. Laurence Tipper, Second ,,	30

The Donor of these prizes has intimated that the competition will be held this year in June.

The Royal Agricultural Society's prizes were again competed for by the students from the Royal Veterinary College, and although there were twelve candidates eligible to compete, only four presented themselves for examination.

The Examiners in their report expressed regret in not eing able to state that the candidates possessed so high a degree of proficiency as last year; but add that the practical portion of the Examination was more satisfactory.

Mr. Matthew Hedley, Junr.	£20 and Gold Medal.
Mr. Thomas Chambers	£10 and Silver Medal.
Mr. Robt. Ernest Hoile	£5 and Bronze Medal.

The Council have recently had under consideration the Contagious Diseases (Animals) Bill, now before Parliament, to which their attention was directed by a letter received from the Lords of the Privy Council, desiring to be favoured with any observations the Royal College of Veterinary Surgeons might wish to offer.

The Council decided to appoint a Special Committee which drew up and forwarded the following report, which was duly acknowledged, and a statement made that it would be submitted to the Lords of the Council.

The Committee reported that, after carefully considering the provisions of the Bill, they are of opinion that these provisions are, of a satisfactory character; and if efficiently carried out will largely tend to prevent and suppress, if they do not entirely succeed in doing so, Cattle plague, Pleuro-pneumonia, and Foot-and-mouth disease.

With regard to the other maladies alluded to in the Bill—viz.: Sheep-pox, Sheep-scab, and Glanders and Farcy, the Committee cannot make any observation, as they are not the subject of special legislation in this Bill, like the afore-mentioned diseases.

Nevertheless the Committee would beg to point out that these disorders are very contagious and destructive, and should receive equal attention in proposed legislation.

The Committee also deem it their duty to point out that there are other contagious and dangerous diseases not mentioned in the Bill, but which should be considered in dealing with this important subject. Among these maladies they may specify Rabies, Swine plague, and Splenic apoplexy or Anthrax fever. They are likewise of opinion that the power of entry, in cases where Glanders or Farcy exists, or is suspected to exist, should be given to the Veterinary Inspector.

With regard to the "Declaration of freedom from Pleuropneumonia" the Committee consider that the period of fifty-six clear days mentioned in the Bill does not afford absolute security, as the latest or incubative stage occasionally extends beyond that time.

In Clause 20, (page 7) par. 1 and 2, the Committee think that in order to ensure a clearer definition, instead of the words "cessation" of the disease, it would be better to substitute "after date of complete recovery of the animal last affected."

With regard to Foreign animals, the Committee are strongly of opinion, that the slaughter at the port of embarcation is greatly to be preferred to that at the port of debarcation, as it would reduce in a much greater degree the risk of importing contagious diseases.

Quarantine to be safe, will require the exercise ot the greatest vigilance and skill on the part of the Veterinary Inspector and Superintendents.

The Committee observe with much satisfaction that Local Authorities must appoint a member of the Royal College of Veterinary Surgeons, as Veterinary Inspector. The urgent necessity for this step has long been felt, and its importance is now immensely enhanced from the fact that the Bill imposes such serious restrictions on owners of animals, which the employment of fully qualified and competent men can alone render acceptable to them.

The Committee are confident that the success of legislative measures for the prevention and suppression of Contagious Diseases in Animals, must greatly depend upon the skill and judgment of the Inspectors; for, owing to the employment hitherto of very many men who were unacquainted with the nature and symptoms of these disorders, much hardship has been inflicted on Stock owners, and the objects of previous Bills have been in a great measure defeated.

The Council were informed that in the Medical Act Amendment Bill (1858), now laid before Her Majesty's Government, there was a paragraph in Clause 22 which was considered very objectionable to the Veterinary profession.

The subject having been laid before the Parliamentary Committee, a letter containing the following Resolution, was submitted to the Lord President of the Privy Council.

> *Resolved*—That the last paragraph of Clause 22 "that nothing in this section shall impose a fine on a person engaged solely in the cure or treatment of the diseases or injuries of animals and not of human beings," is objectionable from the fact that it protects unqualified persons who are engaged in the treatment and cure of the diseases and injuries of animals.

The Committee suggested that either the Clause should be struck out, or words "any duly qualified person" inserted.

The Council have subsequently been informed "that His Grace had no objection to the omission of the paragraph referred to, and that it was only introduced with a view to prevent any vexatious proceedings. He had therefore instructed the Draughtsman to remove the paragraph."

The following is a statement of the attendance of Members at the Council Meetings held during the year 1877-8:

Vice-Presidents.

Samuel H. Withers	3	James McCall	0
Joseph Woodger, Jun.	4	Thomas Walley	0
Henry Joseph Cartwright	5	William Smith	4

Council.

Peter Taylor	8	Ed. C. Dray	8
John Cuthbert	5	Jas. B. Simonds	2
Richard S. Reynolds	3	Jas. C. Broad	3
Francis Blakeway	6	Jas. Moon	5
Benjamin Cartledge	2	T. W. Talbott	0
Matthew J. Harpley	7	Geo. Balls	3
Geo. Fleming	6	W. H. Coates	8
Wm. Pritchard	3	T. W. Gowing	5
Wm. Williams	2	Jas. Collins	5
Hartley T. Batt	8	J. Roalfe Cox	4
Thos. Greaves	8	Gen. Sir F. Fitzwygram	8
Geo. T. Brown	6	Robert L. Hunt	3
		G. Williams	1.

The College Fund.—The only Subscription which the Council have received during the past year has been the sum of Twenty-five Guineas presented by Messrs. Peter Taylor & Son, of Manchester. This sum and the Balance at the

Bankers enabled the Council to make a further Investment in the purchase of Stock.

Amount of Stock standing in the names of the Trustees.	£1390	17	1
Additional purchase	122	16	3
	£1513	13	4
Dividends	43	0	6
Total	1556	13	10

The Council regret exceedingly that the total amount collected towards procuring a suitable building for the Royal College, is not nearly sufficient for the purpose; and it is in contemplation to petition Her Majesty's Government for assistance.

The most valuable acquisition to the Royal College for many years, has been the presentation to the Library and Museum by Wm. Field, Esq.

The gift consists of many rare and standard Books, Anatomical Plates, Paintings, Engravings, and Water Colour Drawings, as well as several interesting Anatomical and Morbid Specimens, Plaster Casts, Models, Horse-shoes, Bits, and Veterinary Instruments. Also a variety of Chemical and Galvanic Apparatus.

Some extra expenditure has been necessarily incurred in providing accommodation for so large an accession to the College property, and a suitable case has been fitted up in the Board-room containing the "Field Library."

Presentations have also been made to the Library and Museum by Professor Brown, Mr. Geo. Fleming (2nd Life Guards), Mr. Jas. J. Meyrick (Royal Artillery), Mr. Graham Mitchell (Australia), and Mr. Jas. Moon (Kingston-on-Thames).

A printed Catalogue of both Libraries has been prepared, the total number of Volumes being now 800.

The Registrar has to report the death of 33 Members of the profession since the last Annual Meeting.

Two hundred and fifty copies of the new Register with the Charters and Bye-laws have been issued and sold during the past year. A Register will shortly be published containing the names of the new Members of the profession and the alterations which have been made since the last issue. Copies may be had on application to the Secretary price 1*s.* 6*d.*, or post free 1*s.* 8*d.*

The Financial Report is annexed. The Balance in hand after defraying the expenses of the year amounts to £528 5*s.* 11*d.*

S. H. WITHERS, Treasurer, *in Account with the Council of the Royal College of Veterinary Surgeons,*
From April 1*st*, 1877, *to* March 31*st*, 1878.

Dr.

	£	*s.*	*d.*
Balance at Bankers', April, 1877	478	3	10
Examination Fees to March 31st, 1877	1,042	13	0
Fellowship do.	262	10	0
Dividends	18	19	10
Copies of Register	13	14	6
Registrar's Fees	0	8	0
Library Catalogues	0	1	0
Property Tax	1	5	0
Gas consumed by C.V.M. Soc.	1	17	6
	£1,819	12	8

Cr.

	£	*s.*	*d.*
Examiners' Fees and Expenses	703	7	3
Brokerage and Banker's Commission	2	0	3
Rent	100	0	0
Rates and Taxes	38	2	10
Salary to Secretary	150	0	0
Insurances	1	18	9
Advertisements	11	15	4
Printing and Purchase of Type	107	16	11
Diplomas	8	0	0
Stationery and Postage Stamps	27	18	5
Clerk	10	0	0
Reporters	15	15	0
Coals, Gas and Wood	25	10	9
Bookbinding and Books for Library	7	2	6
Specimen Drugs and Chemicals	1	8	8
Book-Case and Repairs to Library and Museum	27	19	7
Wages	20	0	0
Petty House Expenses and Messenger	32	10	6
Balance at Bankers'	528	5	11
	£1,819	12	8

Amount of Stock standing in the names of the Trustees, £640 19 11 Three per cent. Consols.
We, the undersigned, have examined the above accounts, and have found them correct.

THOMAS MOORE,
ALFRED WITHERS, } *Auditors.*

April 27, 1878.

The Council are glad to be able to report that the measures which they took have been successful in reducing the expenditure within the income, and the result shows a fair balance on the year in favour of the College.

The Council are also glad to be able to report that the new system of Examination has worked very satisfactorily. The allotment of one subject only to each Table has made much more apparent the success or failure of the Candidate in each subject; for instance, under the old system of Examination, Horse and Cattle Practice were linked together. Under the present system the student is examined at a separate table on each.

Mr. Dray moved, and *Mr. Harpley* seconded, that the report be received.—Carried.

Mr. Dray moved the adoption of the report, and *Mr. Gowing* seconded the motion.

Mr. Dray, as one of the committee who drew up the report, regretted that it was not more favorable, particularly as regards the College Fund. The profession was deserving of better premises than they now possessed, and must, by some means, obtain larger accommodation if they would take their proper status, particularly since the munificent gift by Mr. Field to the museum and library, as well as by other contributors. For want of space the museum and library were not thoroughly appreciated. He thought there was very little chance of their obtaining a grant from Parliament, therefore it was imperative that the profession itself should make a fresh effort by way of starting another subscription. He himself was quite willing, although not a rich man, to double his contribution, on condition that the other subscribers would do the same.

A letter from Mr. Mayer was read, regretting that the profession was not more extensively acknowledged, and that they were without a local habitation which would be worthy of the profession.

Mr. Gowing, while concurring in the remarks made by Mr. Dray, wished to call attention to the altered condition of voting. When first the alteration took place he thought it was highly satisfactory, but since then he had reason to change his mind. He had received a circular from a provincial veterinary society, asking him to vote for four members whose names were therein specified, but he could not conscientiously adopt such a course as the circular suggested. If such a mode of proceeding were allowed to go on, by-and-bye there would be an undue preponderance of country members on the Council. He only wished to call attention to the matter, in the hope that by doing so a free

discussion would be elicited. From his experience of the profession, he had found that the members in cases of election were always able to judge for themselves.

Mr. Owles considered such a system as that referred to by Mr. Gowing was one of coercion. It was also illegal, and would not be tolerated in the election of members of Parliament. He was quite certain that those gentlemen who had issued the circulars would, on consideration, find that they had made a mistake, however high the motives by which they might have been actuated. He did not think it was creditable to the members of the profession that they should be told for whom they ought to vote. The course proposed, he thought, was little short of dictation.

Professor Axe considered the system which had been adopted as one which would not receive recognition in any scientific body. He would not use so strong a word as coercion, but he would regard the method adopted as a species of combination, which he thought was most objectionable, and which he hoped their own profession would not for a single moment countenance. He asked those who intended to vote to exercise their judgment as to the capacity and attention which certain members of the Council had exercised in the performance of their duties.

Mr. Hunting defended the course adopted by the provincial societies, and said it seemed to him that the only two objections urged against it were that it was extremely unfair to the metropolitan members, who had the run of the council-room and could do almost what they chose, and that they, being a scientific body, should not be business men, and adopt the same tactics as those adopted by members of Parliament in securing their election. Trades unionism was no doubt in bad odour, but it was resorted to in every profession. As to the fellowship diploma, he would suggest that it was made much more difficult than it ought to be; and in reference to the educational test, out of sheer charity he would say nothing about it. Looking to the small transactions of the Royal College, he could not agree with the recommendation in the report for the acquisition of larger premises. When the profession was worthy of a better building, no doubt it would obtain it.

Mr. W. Smith could not agree with the view that the scheme adopted by the country associations amounted to coercion. He thought it would be acknowledged that for some years past the London practitioners had really had the best of the matter, and that the country practitioners, having heads on their shoulders and brains in those heads, should participate in some degree in the management of their own affairs. He referred to the system of "packing" the annual meetings, which, he said, was in former

times resorted to for the purpose of securing particular candidates, but he was happy to think that such a state of affairs had ceased to exist. Speaking for his friends in the country he was sure that they would be as unwilling to do an act of injustice as any gentleman in the City of London. To say that the mode adopted by the country associations was coercion, unconstitutional, or illegal, was to say that which was untrue and unworthy of those who said it.

Mr. Howard was of opinion that until more commodious premises were obtained the same lack of interest would continue to be manifested in the affairs of the Royal College of Veterinary Surgeons. While fully appreciating the past labours of the Council he could not but draw attention to the fact that by the Supplemental Charter the profession were deprived of their political rights at one swoop, and, knowing this, no member of the profession would subscribe to the funds for the erection of more extensive premises.

A member repudiated the idea of coercion or trades unionism which had been suggested by some of the previous speakers. It appeared to him that the circulars issued were more in the way of suggesting suitable members of the profession as their representatives than anything else.

Mr. Hunting, sen., as a provincial practitioner, and as having some share in the improvement of the profession by the establishment of veterinary medical associations in the provinces, gave it as his opinion that the provincial members were almost the hardest working members of the profession, and that what they had done in the way of issuing circulars had been with the object of furthering the interests of the profession at large. If the provincial societies had done nothing else they had given increased energy to the members of the profession in London.

Mr. Helmore agreed with the views of the last two speakers. He did not know of any abler or worthier members of the profession than those sent from the provinces. It was sometimes desirable that fresh blood should be infused into governing bodies. He had, on former occasions, had at the annual meeting cards put into his hand soliciting his vote for particular candidates, so that metropolitan members of the Council should be the last to complain of the system of issuing circulars by the country associations. He did not look upon the issuing of these circulars as a system of coercion, but merely as a recommendation of certain candidates for the consideration of the members. Having expressed his satisfaction with several recommendations in the report, he suggested that the refuse of animals which were slaughtered should be properly disposed of, because in it

were the germs of disease, which were sometimes spread all over the country.

Mr. Fleming, alluding to the system of voting papers that had been objected to by some of the previous speakers, thought that it did not deserve any hard terms. He paid a high compliment to the administrative ability and tact of the provincial societies, the members of which, he said, were in an excellent position to judge as to who were the fittest members to represent them on the Council. The course that had been adopted was called unparliamentary, but it was not so, because in every parliamentary election he had received cards similar to those that had been issued by the country associations. He thought it would be an advantage to the profession if even more societies were formed, especially in the west and the south.

Mr. Peter Taylor, in a speech of some length, as a country member indignantly repudiated the idea of the country associations being actuated by any but honorable motives, and charged the London professors with packing the room with students at the annual meeting in order to secure particular candidates.

Professor Axe asked Mr. Taylor to withdraw the charge he had made as to packing the meetings. Such a course had never been condescended to either by himself or any other of the London professors.

Professor Pritchard seconded Professor Axe's remarks, and demanded from Mr. Taylor an explanation.

Mr. Taylor adhered to his statement and expressed himself as willing to prove it if necessary.

Mr. Greaves expressed himself as taking a deep interest in provincial associations, which, he thought, tended to further the interests of the profession and to promote unanimity. He was quite sure that those associations would send none but tried and experienced men as their representatives. He contended that the provincial members were acting rightly and properly in issuing the voting papers.

Mr. Barford said he had a circular sent to him, but he did not look upon it as a species of coercion. He believed the veterinary associations were extremely representative in their character, and, as representing the southern counties, he expressed his regret that, the districts being so widely situated and thinly populated, there were so few veterinary associations in that quarter, and that the former number could not be kept up. He gladly welcomed the new system of voting that had been adopted.

Professor Pritchard, again adverting to the charge brought by Mr. Taylor against the London professors of packing the annual meetings, gave it a most positive denial.

Mr. Cartledge endorsed the statement made by Professor Pritchard, and gave it as his opinion that the country associations had always been fairly represented; in fact, they had been more powerful in the selection of their representatives than the metropolitan members.

Mr. Hunt said he could safely assert that he had not been influenced by the voting papers that had been sent him. He called attention to the fact that a fair proportion of London representatives was necessary, because being on the spot and having the ear of the members of the Government and those in authority in the State, they could facilitate the passing of measures which tended to promote the interests of the profession.

Mr. Harpley called attention to the abuse that had been made of the ballot in the case of the Royal College of Surgeons, who had now discontinued the method, and the profession, knowing that such a mode of voting could be abused, would, he was quite certain, stop short before that abuse was made use of.

Mr. Rowe pointed out what he considered an omission in the report. The committee had suggested other diseases which were not mentioned in the report, but to these he thought should be added parasitic diseases, the increase in which any one in the habit of making *post-mortem* examinations could not fail to be struck by.

Mr. Fleming, as chairman of the committee who drew up the report, said they did not think it necessary to specify all the maladies which should be taken notice of by the Government, who were entirely disinclined to notice more than the three bovine maladies mentioned in the bill.

The President said that, without joining in the discussion which had taken place rather warmly on the action of the provincial societies, there was one point which had been rather overlooked, namely, that the northern societies had not used their great power to return exclusively provincial members; and, if he recollected rightly, the list that Mr. Dray read contained, out of the seven names, three gentlemen who were well known in London. He begged to move the adoption of the report, together with the treasurer's balance sheet.

The motion was carried unanimously.

The minutes of last meeting were read and confirmed.

On the motion of the *President*, seconded by *Mr. Harpley*, power was given to the Council to appoint a committee to confer with the Highland and Agricultural Society in regard to the discontinuance of their examination.

Mr. Fleming moved that the Government be solicited to assist the Royal College of Veterinary Surgeons in giving it a suitable home, and one which would be worthy of the profession. He

thought the time was come when the country should assist them, considering the advantages the profession had conferred upon every part of the empire during the last thirty-five years in protecting its immense animal wealth.

Mr. Cartledge seconded the motion, which was supported by Mr. W. Smith, and ultimately carried.

The Secretary then read the scrutineers' report of votes for the election of members. The result was as follows:

General Sir Frederick Fitzwygram	558	Mr. Proctor	303
Mr. Collins	530	— Hunt	297
— Cox	374	— Gowing	274
— Coates	345	— Smith	158
— Morgan	319	— Naylor	127
— Freeman	310	— Williams	118

The President then declared Messrs. Collins, Cox, Coates, Morgan, Freeman, Proctor, and himself, duly elected.

The President decided by lot, in accordance with the provisions of the Charter, that Mr. J. Roalfe Cox fill the vacancy caused by the resignation of Mr. Talbott.

The meeting then adjourned.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

The fifty-fifth quarterly meeting of the Association was held at the Medical Institute, Hope Street, May 10th, 1878, William Whittle, Esq., President, in the chair.

There were present Messrs. Reynolds, Heyes, Morgan, Moore, C. W. Elam, and Watson (Liverpool), Thos. Greaves (Manchester), and the Secretary.

Letters of apology were received from Messrs. G. Fleming, W. A. Cartwright, H. J. Cartwright, John Carless & Son, T. Roberts, Jas. Hawell, jun., W. & T. Leather, Tom Taylor, and Samuel Locke.

The minutes of the previous meeting were read and confirmed.

The Fleming Testimonal Fund Committee gave in their report, and were instructed to continue their efforts in order to make the fund as great a success as possible.

It was unanimously resolved that on the occasion of Professor Walley's visit to the Association in July, a dinner be provided on the same plan as last year. The following gentlemen were appointed a committee to carry out the necessary arrangements, viz., Messrs. Reynolds, Morgan, and the Secretary.

Mr. James Watson (Liverpool) was nominated for election as a member of the Association.

Mr. Moore read a paper on "Purpura Hæmorrhagica." He apologised to the members for the incompleteness of his paper. He had intended to make a searching examination into the pathology of this somewhat obscure disease; but a number of unforeseen circumstances occurred which had interrupted his investigations, and, as a consequence, he was reluctantly compelled to abandon that portion of his subject, and was not therefore in a position to throw any fresh light upon it beyond what was already known to most of them.

He then briefly sketched the symptoms and distinguishing characters of this disease, and reviewed the several modes of treatment recommended by the different veterinary authors. His principal purpose, however, was, he said, to bring before their notice a remedy which had been used by his father (Mr. Moore, of London) and himself for a number of years with marked success, viz., *potassæ bichromas*. He proceeded to give abstracts of a number of cases treated by this agent, some of them evidently being of great severity. Such, however, was his faith in the potency of this remedy that he continued its administration in the most aggravated forms, and under the most serious complications of the disease, regarding it as nothing less than a specific. Nevertheless he cautioned the members against the administration of too large doses of the medicine, as these would only aggravate instead of alleviate the symptoms. The dose he recommended was one eighth of a grain in solution, repeated every four hours. As an external dressing to the swellings he used *linimentum calcis*.

A very animated discussion followed in which the whole of the members present took part. None of the members, however, had tried the remedy recommended by Mr. Moore for this disease; although some of them had tried it in the treatment of other diseases for which it was declared to be a specific; but they could not report very satisfactorily of its beneficial effects. They had, however, administered it in somewhat larger doses than those recommended by Mr. Moore. The treatment generally practised and almost unanimously recommended for this disease by the members was, *first*, the administration of a laxative, accompanied by diuretics, and followed by vegetable and mineral tonics. Some preferred the administration of a dose of aloes, while others recommended linseed oil in the earliest stages of the disease; the general opinion being that a marked alleviation of the symptoms invariably followed the evacuation of the bowels. It was remarked that the fæces discharged under such circumstances were generally of a very fœtid character and voided in large quantities. *Oleum terebinthæ* was generally recommended except by the President, who had used the iodide of iron, combined with stimulants; good ale being a special favourite of his. He did not purge.

Good food, cleanliness, and fresh air were considered great auxiliaries in the treatment of the disease, but when symptoms

of abdominal pain were manifested, indicating that the bowels and internal organs were affected, it was considered advisable to withhold dry and solid food from the patient, although in many cases the appetite might remain good. Exercise, at least in the more aggravated forms of the disease, was not considered beneficial, while bleeding was generally considered as contra-indicated. It was mentioned by several members that the application of a blister to the swellings about the head very often removed them almost instantaneously, although in one or two cases somewhat serious results followed the application of a blister to these parts. Puncturing the swellings was generally condemned. The experience of most of the members was that when the lungs and other internal organs became seriously affected the case very frequently terminated fatally in a few hours.

A vote of thanks was warmly accorded to Mr. Moore for his paper, and one likewise to the President, which terminated a very interesting and instructive meeting.

D. Hutcheons, *Hon. Sec.*

GLASGOW VETERINARY COLLEGE—AWARD OF PRIZES.

The winter session at this institution terminated on Wednesday last, and on Thursday and Friday the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the college. The candidates for the diploma were also subjected to a rigid practical examination conducted on horses, cattle, and sheep brought to the college for that purpose. The board of examiners included the following gentlemen: — General Sir Frederick Fitzwygram, Bart., F.R.C.V.S., president Royal College of Veterinary Surgeons, London; Professor Dickson, Glasgow University; Professor Turner, Edinburgh University; Professor Crum Brown, Edinburgh University; Dr. Dunsmure, Edinburgh; J. Harpley, Esq., Royal Horse Guards, London; George Fleming, Esq., London; B. Cartledge, Esq., Sheffield; R. L. Hunt, Esq., Birmingham; Alexander Robinson, Esq., Greenock; W. Robertson, Esq., Kelso. The following gentlemen were also present as *ex officio* members:—Principal M'Call, Professors Knox, M'Gill, Cooke, and Macqueen. Twenty-four students presented themselves for examination, and the following gentlemen were awarded the medals granted by the Highland and Agricultural Society of Scotland, and the certificates of merit granted by the college:—

Horse Pathology (written examination). Medallist—Mr. Barry, Kilkenny, Ireland. 1st class certificates—Messrs. Wilkinson, Manchester; Robertson, Glasgow. 2nd class cer-

tificates—Messrs. Houston, Paisley; W. Cloy, Cromford; and Webster, Wexford, Ireland.

Cattle Pathology (written examination). Medallist—Mr. Houston. 1st class certificates—Messrs. Wilkinson and Barry. 2nd class certificates—Messrs. Cloy and Robertson.

Practical examination of horses as to soundness, operations, &c. Medallist—Mr. Wilkinson. 1st class certificates—Messrs. Barry and Houston. 2nd class certificates—Messrs. Robertson and Cloy.

Practical examination of cattle and sheep as to age, soundness, operations, &c. Medallist—Mr. Houston. 1st class certificates—Messrs. Cloy and Webster. 2nd class certificates—Messrs. Robertson and Ferguson.

Best oral examination on all subjects. Principal M'Call's gold medal—Mr. Hugh Ferguson, Dublin.

Histology and Physiology. Medallists—Messrs. Currie, Arran; Hingston, Bay City, U.S.A. 1st class certificates—Messrs. Houston, Barry, Mahony. 2nd class certificates—Messrs. Hamilton, Cloy, Wilkinson.

Anatomy (special and comparative). Medallist—Mr. Hamilton, Blantyre. 1st class certificates—Messrs. Mahony and Currie. 2nd class certificates—Messrs. Storrar, Chester; M'Dougall, Oban.

Pathology (junior written examination). Medallist—Mr. Hamilton. 1st class certificates—Messrs. M'Dougall and Currie. 2nd class certificates—Messrs. Mahony, M'Quiston, and Storrar.

Best oral examination on Anatomy, Physiology, and Histology. Professor Allen Thomson's Gold Medal—Mr. Currie, Brodick, Arran.—*Glasgow Daily Mail.*

EDINBURGH VETERINARY COLLEGE—PRESENTATION OF PRIZES.

The session of the Veterinary College, Clyde Street, was brought to a close on April 26th by the presentation of the prizes to the successful students. The ceremony took place in the City Chambers—the Town Council being Trustees of the College, and there was a large attendance of ladies and gentlemen, friends of the students, and of the institution. Bailie Rowatt, in the absence of the Lord Provost, and of Bailie Cranston, convener of the committee of management, presided, and there were present Bailie Tawse, Councillors Landale, Turnbull, Macdougald, Milne, MacKnight, Principal Walley, Professors Baird and M'Fadyean, Messrs. M'Callum, V.S., Rutherford, V.S., Macdougald, Granton Mains, &c.

Principal Walley read his annual report to the trustees of the College. I have, he said, to report that notwithstanding one or two unavoidable and unlooked-for drawbacks at the close of

the last sessional year, the present condition of the College is in every sense satisfactory; the number of students joining since the date of my last report being far in excess of the number during any similar period for several years, and, what is more encouraging, the report of Dr. Donaldson (the examiner appointed by the trust) states that the general educational attainments of the candidates are considerably above those of previous years. As to the results of the spring examinations, I cannot at present say much, as they have not yet terminated, but so far as they have gone we have every reason to be satisfied. In the competition for the Highland and Agricultural Society's gold medal for the best general examination, Mr. John Malcolm took the first place; the same gentleman also made a good second for the best practical examination. In the intra-collegiate competitions for prizes much spirit has been shown, especially in the competition for Councillor Waldie's prize; the tests, also, have been much more severe than usual. The results of the various competitions are as follows:—For Councillor Waldie's prize (open to all the students) four were placed, after three trials, in the short leet, viz., Messrs. Watkins, Dollar, Malcolm, and Young, the final test placing Mr. Young first, and Mr. Watkins second. For the Highland Society's silver class medals, Mr. Malcolm takes the highest place, having obtained the medals for botany, chemistry, horse pathology, cattle pathology, and physiology—Mr. John Blench being second, he having obtained the medal for anatomy and the extra medal for cattle pathology, and being second in the competitions for horse and cattle pathology. Mr. H. E. Poole is the recipient of the medal for materia medica, and Mr. Watkins of the medal for clinique and practical examination. Mr. J. T. Gregory deserves honorable mention in the competition for the horse and cattle pathology medals. The Professor's gold medal for cattle pathology was obtained by Mr. Malcolm, Mr. Blench being second. The result of these various examinations gives Mr. Malcolm the gold medal, and Mr. Blench the silver medal, of the Dick trust. For the best essay of the session Mr. Dollar takes the silver medal of the Veterinary Medical Association and Mr. Malcolm the certificate of merit, the subject chosen by the former essayist being "strangles," by the latter "zymotic pleuro-pneumonia in cattle." Dr. Donaldson reports Mr. Ryan as having obtained the extraordinary matriculation certificate, and Mr. Woods the ordinary for the present session, Mr. Calvert being third. I have to express my indebtedness to my colleagues for their sympathy and assistance; to Dr. Donaldson for carrying out the examination for the matriculation certificates, and to Mr. Robertson, Kelso, for acting as arbiter in the essays. The following gentlemen having complied with the rules of the College and of the Veterinary Medical Association, and having passed the Highland and Agricultural Society's examinations, are entitled to the class certificates and to the diplomas of membership and fellowship of

the Association, viz., Messrs. Muir, Dollar, Watkins, Gregory, Poole, Young, Blench, Walsh, O'Riardon, Malcolm, Kirk, and Pringle. The certificates of several gentlemen who have not yet passed any examination are withheld until the results of the London examinations are known.

The medals were then presented to the students by Bailie Rowatt, Bailie Tawse, Councillor Landale, and the Principal.

The Chairman said he was expressing the sentiments of every member of the trust when he announced the extreme gratification which the Principal's report had given of the success of the last session. He was glad to hear that the number of students at the College was greater than in any year since Principal Walley came to the College, and the examiner's report showed that the students' examinations had been above the average. On the part of the trustees of the College, he begged to thank Principal Walley and the Professors for the great attention paid to the students. (Applause.)

Principal Walley congratulated the students upon their success, and wished them very heartily still further success in the examinations for the London diploma. He thanked the students for their gentlemanly conduct during the past session, and for their attention to their studies. He sincerely hoped that those who had completed their course would go forward to the world remembering their *alma mater*, and that when opportunity occurred they would assist younger men at college by sending them interesting specimens. He trusted they would follow their noble calling with the earnest determination of affording as much relief to the lower animals from pain as was within man's power. (Applause.)

On the motion of *Bailie Rowatt*, a vote of thanks was accorded to the Highland Society for the interest they had always taken in the College, and for the medals which they had presented to the successful students.

On the motion of *Principal Walley*, a vote of thanks was given to Bailie Rowatt for presiding..—*The Scotsman.*

EDINBURGH NEW VETERINARY COLLEGE—PRESENTATION TO PROF. WILLIAMS, AND AWARD OF CLASS PRIZES.

THE winter session of the New Veterinary College, Edinburgh, was brought to a close on Saturday afternoon, when prizes were presented to the successful students, and presentations made to Professor Williams by the students attending the college, and by General Sir Frederick Fitzwygram, Bart., on behalf of a large number of members of the veterinary profession. The meeting took place in the hall of the college, Gayfield House; and beside the students there was a large

attendance of ladies and gentlemen. The chair was occupied by General Sir Frederick Fitzwygram, President of the Royal College of Veterinary Surgeons; and among other gentlemen present were—Professor Williams, Dr. Young, Mr. J. M. Barclay, R.S.A.; Mr. Munn, High School, Edinburgh; Messrs. Finlay, Aitken, Dalkeith; Borthwick, Kirkliston; Connochie, Selkirk; Macdougal, Storie, East Linton; Dollar, jun., London, &c.

Professor Williams intimated letters of apology for absence from a large number of gentlemen, and afterwards made a few observations appropriate to the close of the session, which he said had been the most successful ever experienced at the college, the number of students having been 86, or about 20 more than attended the previous session. The students had also been most attentive in their studies, and had attained generally a high degree of proficiency. The Professor then proceeded to deliver the prizes as follows:—

The gold medal presented by the Highland and Agricultural Society for open competition had been gained this year by one of the students attending the New College, Frank Bottomley, Oldham; and in the same class of prizes first-class certificates had been awarded to John T. Phillips and David Crabb, and second-class certificates to E. H. Leach and J. H. Wilson. The following prizes, given by the Highland Society, and confined to students attending the New College, had been awarded to the undermentioned students:—

Equine Pathology—Silver medal, W. H. Bridge; first-class certificates, J. S. Walker and Henry Low; second-class certificate, John T. Phillips.

Bovine Pathology—Silver medal, John T. Phillips and Edward Kitchin, equal; first-class certificate, W. H. Bridge; second-class certificate, A. Sievewright.

Anatomy—Silver medal, T. H. Lewis; and certificates to John Carr, F. Garside, and Edward Leach.

Chemistry—Silver medal, Wm. Swinthenbank; first-class certificates to J. Fraser.

Silver medal presented by the Edinburgh Veterinary Medical Society, gained by Edward Kitchin, Doncaster. A certificate was granted to Joseph Darbyshire, Wigan, the award being made by Mr. Paterson, V.S. Dumfries.

Botany, Physiology, and Materia Medica—Silver medal, awarded to T. H. Lewis, Crewe.

In addition to the above, *Professor Williams* also intimated that several prizes had been awarded for examinations on other subjects, such as educational examinations, to——Nash, who had gained the first class, and Canty the second prize. For the prize of £20 which he himself had offered to students who were successful in three successive years, the successful competitors in this, the second year, were again T. H. Lewis and E. H. Leach; and if they were successful next year, the Professor intimated that he would have the pleasure of handing each a cheque for

£10. The silver medal of the Edinburgh Veterinary Society for the best essay had been awarded to Edward Kitchin.

The prizes having been delivered, General Fitzwygram rose to present the Professor with a full-sized head portrait of himself, painted by Mr. G. M. Barclay, R.S.A., and bearing the following inscription:—"Presented to William Williams, Esq., F.R.V.S., F.R.S.E., Principal of the New Veterinary College, Edinburgh, by members of the veterinary profession, as a mark of their kind regard for his professional and personal career." In making the presentation, *General Fitzwygram* said that as a personal friend and as president of the Royal College of Veterinary Surgeons he had great pleasure in making the presentation. As a work of art it was valuable, but he knew that to Professor Williams it was more valuable from the fact that it was a presentation to him as the Principal of the New Veterinary College by the veterinary profession. It was always pleasing for a gentleman to have a testimonial presented to him, but when it was presented by a large body of subscribers, it showed more fully the worth of the man and also his personal attainments. As regarded the latter, he would say that the Principal was really remarkable, not so much because he had shone in one branch of the veterinary science, but because he had shone in all three branches of the science (applause), as a practical man in the treatment of disease; secondly, for his wonderful skill as a professor in teaching (applause); thirdly, his reputation was more widely known throughout the length and breadth of the land, and also of Europe, India, and the United States as one of the best writers of veterinary works that ever lived. (Great applause.) He wished them specially to note this last feature, because veterinary literature had hitherto been one of the weak features connected with veterinary science. In referring to the Principal's career, the gallant General stated that a few years ago he was in possession of a large and lucrative practice as a veterinary surgeon at Bradford. About that time the Principalship of the Old Clyde Street College became vacant—an institution of which he never spoke without respect, founded, as it was, by the great skill and unfailing energy of his old friend, Professor Dick, who worked for it during so much of his life, and, when he died, gave what he had gained to the veterinary profession. His friend, Professor Williams, accepted the vacant office, with the sole aim of devoting his great professional talents to the advancement of veterinary science, and under him the college had increased in numbers, reputation, and eminence. (Applause.) But, after a time, some difference, into the nature of which it was not necessary for him to enter, arose between Professor Williams and the governing body of the school, and he resigned his principalship. Thus, at middle life, the Professor was somewhat stranded. But Professor Williams was a man worth calling a man. (Applause.) He was not going to give in, but determined to fight the battle of life, and the battle of veterinary science,

trusting to his own resources (applause), a high character, great skill in teaching, and the confidence of his students. (Applause.) He thought it was a remarkable feature in the career of the Professor that he succeeded in carrying away from the old school in Clyde Street to a new and untried school almost the whole of the students of the Clyde Street school. (Applause.) Now, he might fairly say that success had crowned his efforts, as the New Veterinary College, if not in the foremost, was in one of the foremost positions of veterinary schools. (Applause.) He was glad to have heard from the Principal that day that the school was now more prosperous in numbers than in any other session, and that the students had behaved themselves in their classes like gentlemen and men of honour. (Applause.)

Professor Williams, in reply, said he felt the honour conferred upon him so deeply that he was unable to express his gratitude in words. He placed a very high value on this handsome presentation, given to him through the College of Veterinary Surgeons as a mark of esteem aud respect from a large number of subscribers. It would console him for many anxieties and troubles he had had to bear, and be an ever-present evidence to him that his conduct in the past had received their approval. (Cheers.) It would also prove a stimulus to him for the future, and make him careful to do nothing to forfeit the good opinion already formed of him by the members of the veterinary profession. The fact that the presentation had been made to him by Sir F. Fitzwygram, the esteemed President of the Royal College of Veterinary Surgeons, enhanced the value of the gift. He again thanked the subscribers for the mark of their esteem aad respect now conferred upon him. (Cheers.)

The portrait was a very striking likeness, and drew forth warm applause when it was unveiled in presence of the audience. The following was the inscription:—"Presented to W. Williams, Esq., F.R.C.V.S. and F.R.S.E., Principal of the New Veterinary College, Edinburgh, by members of the veterinary profession, as a mark of their high regard for his professional and personal character. 1878." The artist was Mr. G. M. Barclay, R.S.A.

Mr. Kitchin afterwards presented Principal Williams, in name of his fellow-students, with a large photograph, in gilt frame, of the students attending the New College during the present session, and the Principal suitably acknowledged the gift.

A vote of thanks was afterwards accorded to the artist, *Mr. Barclay*, who replied; and a similar compliment was paid to the chairman, who gave a short address in closing the session, referring to the increasing importance of the veterinary profession and the duties of students and professional men.

This closed the proceedings.

ONTARIO VETERINARY COLLEGE—ANNUAL EXAMINATIONS.

The Board of Examiners appointed by the Agriculture and Arts Association consist of the following gentlemen:—Messrs. Cæsar, V.S., Port Hope; Coleman, V.S., Ottawa; Cowan, V.S., Galt; Duncan, V.S., Goderich; McNaught, V.S., Seaforth; Sweetapple, V.S., Brooklin; Wilson, V.S., London; Drs. Thorburn and Barrett.

The following gentlemen received diplomas:—S. G. Anderson, Tottenham; L. P. Chase, Illinois; J. R. Deacon, London; F. W. Derr, Ohio; G. Falls, Ottawa; T. Hagyard, Kentucky; C. Hand, Alliston; H. Heckenberger, Pennsylvania; G. P. Hinman, Cobourg; J. Humphries, Pennsylvania; W. Jex, Brantford; A. Moore, Guelph; J. McKerracher, Highgate; J. V. Newton, Barrie Ontario; S. P. Palmer, Toronto; B. A. Pierce, Illinois; H. Setterby, New York; A. N. Smeall, Toronto; E. R. Smithers, St. Louis; A. R. Stephenson, Cobourg; J. Waddel, Seneca; L. E. Wheat, Pennsylvania; G. Theobald, Teeswater.

The following gentlemen passed a Primary:—F. W. Mathews, Toronto; S. Ottewell, Glasgow. Prize and Honour List—Junior Class, Chemistry, 1st prize, W. Rose. Honours—S. Foelker, J. Gemmel, F. C. Grenside. Anatomy—Silver Medal presented by the Agriculture and Arts Association, S. Foelker; 2nd, E. Prentice; 3rd, J. C. Rutherford. Honours—T. Fisher, J. Frink, F. C. Grenside, W. Rose.

PRIZES.

Senior Class—Breeding and Management of Stock—1st prize, given by Hon. S. C. Wood, Commissioner of Agriculture, S. P. Palmer; 2nd and 3rd, presented by the Agriculture and Arts Association, G. P. Hinman, J. V. Newton.

Pathology.—Silver Medal presented by the Ontario Veterinary Medical Association, G. P. Hinman; 2nd, W. Jex; 3rd, H. Sutterby and S. P. Palmer, equal. Honours—L. P. Chase, F. W. Derr, G. Falls, J. Humphries, J. V. Newton.

Physiology.—1st prize, L. P. Palmer. Honours—G. Falls, W. Jex.

Chemistry.—1st prize, H. Sutterby. Honours—G. P. Hinman, J. Humphries, S. P. Palmer, E. Smithers, L. E. Wheat.

Entozoa.—1st prize, J. V. Newton. Honours—S. G. Anderson, G. P. Hinman, A. N. Smeall, H. Sutterby.

Materia Medica.—1st prize, S. P. Palmer; 2nd, W. Jex and G. P. Hinman; equal honours, J. Humphries, E. Smithers, H. Sutterby.

Anatomy.—Silver medal presented by the Agricultural and Arts Association, H. Sutterby; 2nd, W. Jex; 3rd, S. P. Palmer. Honours—G. Falls, G. P. Hinman, J. N. Newton. Gold Medal given by the Ontario Veterinary Medical Association for the best general examination, W. Jex.

The announcements were greeted with loud applause, after

which Professor Buckland presented a gold medal to Mr. Jex in appropriate words to which Mr. Jex replied. Professor Barrett then presented the silver medal to Mr. Hinman as having passed the best examination. He complimented Mr. Hinman on his success in pathology. Mr. Hinman replied, expressing his thanks for the medal, which, he said, was quite unexpected.

Mr. Sutterby was then called forward, and

Mr. T. Stocks, President of the Board of Agriculture, presented him with a silver medal as the best anatomist in the senior class. Mr. Stocks spoke highly of the veterinary profession which requires more skill than the medical profession. He mentioned favorably the strict character of the examinations, and urged the students to press forward in the path of improvement. After paying a grateful compliment to Professor Smith and handing the medal to Mr. Sutterby, he resumed his seat amid applause. Mr. Sutterby replied appropriately, and Mr. Craig presented a silver medal to Foelker, as having passed the best junior examination.

Mr. Coleman very appropriately alluded to the great pleasure it gave him to attend the annual examinations, and stated that he had for several years acted as an examiner, and he was pleased to notice the very high standard which the graduates of to-day had obtained. He trusted that those gentlemen who had to-day obtained their diplomas would still continue to be students, to keep up with this progressive age, and that their career would be as bright and shining as the elegant medals which had just been presented. (Applause.)

Mr. Cæsar, and *Professors Barrett* and *Buckland*, then spoke, after which a vote of thanks was passed to the Examining Board for the able and impartial manner in which they had conducted the examinations.

Mr. Newton then spoke of the energy and ability shown by the Professors of the College, and called for three cheers for the Faculty, which was given with a will.

Professor Smith replied, and thanked the students for their kindness. But a few days ago he had met them as students, now they were professional men. He took leave of them with regret, but earnestly hoped that they would prosper in their profession. The company then dispersed, after heartily joining in "God save the Queen."

NEW MEMBERS OF THE PROFESSION.

At the several meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow, on April 24th, 26th, and 27th, the following students passed their final examination and received the diploma of the Royal College of Veterinary Surgeons:

Edinburgh Veterinary College.

Mr. John Blench	Thornley, Durham.
— Thomas Peter Young	Edinburgh.
— Walter Johnston Holland	Manchester.
— George Henry Watkins	Tredegar, Monmouthshire.
— Peter James Coombe	Haddington.
— John George Muir	Mauchline, Ayrshire.
— William Slowan Pringle	Newcastle-on-Tyne.
— Thomas Mallalieu Coates	St. Helens, Lancashire.
— Thomas John Watt Dollar	London.
— John Thomas Gregory	Southsea, Hants.
— Thomas Alexander Killick	Eccleshall, Staffordshire.

Messrs. Thomas John Watt Dollar and Peter James Coombe passed with GREAT CREDIT.

Edinburgh New Veterinary College.

Mr. Robert Knight	Dunfermline.
— John Thomas Phillips	Carmarthen, South Wales.
— Adam Sievwright	Keith, Banffshire.
— David Crabb	Paulride, Carnoustie, Forfarshire.
— William Henry Bridge	Oldham, Lancashire.
— Henry Hannan	Limerick.
— Joseph Darbyshire	Wigan.
— Frank Bottomley	Oldham.
— Edward Kitchin	Robin Hood's Well, Doncaster.
— William George Chisnall	Liverpool.

Mr. David Crabb passed with GREAT CREDIT.

Glasgow Veterinary College.

Mr. William Findlay Houston	Wester, Walkinshaw, Paisley.
— Andrew Robertson	Glasgow.
— Amos Wilkinson	Didsbury, Manchester.
— Clayton Love Hingston	Bay City, Michigan, U.S.
— Hugh Adolphus Warburton, Ferguson	Dublin.

The following Students passed their SECOND EXAMINATION:

Edinburgh Veterinary College.

Mr. George Marshall Mitchell | Mr. Charles Rutherford.

Edinburgh New Veterinary College.

Mr. Alfred James Jones.	Mr. Thomas Henry Lewis.
— John Carr.	— John Henry Wilson.
— Andrew Hume.	— Thomas Barrot Stone.
— Edmund Wood Goldsmith.	— Philias Martial.
— Edward Hugh Leach.	— Kay Lees.
— Frederick Garside.	— John Legge.

Glasgow Veterinary College.

Mr. William Miller.	Mr. John McDougall.
— William McQuiston.	— James Storrar.
— Jeremiah McCarthy.	— Bernard Patrick Mahoney.
— John Bailie Hamilton.	— Charles Douglas Currie.

The following Students passed their First Examination:

Edinburgh Veterinary College.

Mr. John Douglas.	Mr. Robert Humphries Jones.
— Alex. Henderson Gentle.	— Robert Bouchier Prentice.

Edinburgh New Veterinary College.

Mr. Joseph Temple.	Mr. Charles James Martin.
— James Wood Ingram.	— Edward Yorston.
— William Swithenbank.	— James Bell Paterson.

Glasgow Veterinary College.

Mr. William Pettigrew.	Mr. Hugh Gardner Marshall.

Mr. William James Gray Johnston.

PARLIAMENTARY INTELLIGENCE.

CONTAGIOUS DISEASES (ANIMALS) BILL.

House of Lords, *Monday, May 27th.*

Their lordships having gone into committee on this Bill, clauses up to Clause 25 inclusive were agreed to.

On Clause 26, which gave power to the Privy Council to provide for cases of pleuro-pneumonia and foot-and-mouth disease during transit,

The Duke of Somerset called attention to sub-section 2, which gave power to the Privy Council, by general orders, to make such provision as they may think fit for the above purpose. He had on the paper an amendment with reference to quarantine. This sub-section included quarantine, and the evidence of competent authority went to show that the proposal in the sub-section was not desirable, and that even if it were it would be impracticable. Last year the Lord President himself condemned large quarantines as hotbeds of disease. He moved to omit from this clause the words "or foreign animals' quarantine station."

The Duke of Richmond and Gordon said that he had not changed his opinion since last year. Last year he thought that quarantine of itself would not prevent the introduction and spread of disease. He continued to think so; and, accordingly, he had introduced in this Bill the principle of a compulsory slaughter at the port of debarcation of all fat animals imported from abroad; so that the quarantine would only have a limited application. It would apply to imported store cattle, and to animals imported for breeding purpose, which would not be very numerous.

The Marquis of Ripon supported the view of the Duke of Somerset.

Their lordships then divided on the question that the words proposed to be left out stand part of the Bill, when there were—

Contents	131
Non-contents	53
Majority	—78

The amendment was accordingly rejected, and the clause was ordered to stand part of the Bill.

Clauses up to 32, inclusive, were also agreed to.

On Clause 33, which dealt with the prohibition, slaughter, and quarantine of foreign animals,

The Marquis of Ripon said he was as anxious as his noble friend the Lord President that the Bill should pass; but he was opposed to its provisions going further than was required by the necessities of the case. He thought that in its present shape it did go too far. It was with satisfaction he saw that, in consequence of a wise recommendation of the select committee to which the Bill had been recently referred, Canada and the United States were no longer included among the countries fat animals from which on their arrival in this country must be slaughtered at the port of debarcation. Did the compulsory slaughter extend to animals coming from those countries, an important and rapidly increasing trade would be very considerably injured, if not altogether destroyed. As showing this, he might mention that during the first five months of last year the number of live animals imported from Canada and the United States to the port of Liverpool was 1360. In a somewhat shorter period of time this year the number was 5880. (Hear, hear.) The lines on which his amendment to this clause proceeded was the principle applied in every other part of the Bill. His object was to have that principle applied to cattle imported from European countries, and he contended that the 33rd clause, and the manner in which by its provisions animals from those countries were to be dealt with, were in opposition to that principle. The principle of the Bill in respect of the home trade and of the trade of the United States and Canada was that of vesting unlimited discretion in the Privy Council. He contended that there was no occasion for that. A state of things might prevail in foreign countries which would render the exercise of any discretion on the part of the Privy Council as regarded the slaughter of animals imported a very difficult matter. The number of diseased animals might be so equally diffused throughout the European countries as to make it difficult; but he hoped to show that there were countries the animals exported from which might be introduced here without compulsory slaughter. Under the existing law there were five unscheduled countries from which animals were admitted—Denmark, Norway, Sweden, Spain, and Portugal. Their lordships would remember that last year his noble friend the Lord President stated that during the year 1876 there came into this country 11,662 diseased animals out of 1,416,956, the total imported, and that for the five unscheduled countries there were only 174 diseased animals out of 164,893, the total imported

from those countries. Their lordships had now before them the figures for 1877, which showed that 3790 diseased animals came in out of 1,357,856 in all, and for the five unscheduled countries only 15 diseased animals out of a total number of 143,523. During the last eight years 620,190 animals had been imported from the unscheduled countries, and of these only three were affected with pleuro-pneumonia, and none at all with cattle plague. (Hear, hear.) But he was content to stand on the case of Denmark alone, and he would confine himself to cattle. There had been imported from that country during the last eight years 252,342, of which only 36 were diseased. Last year the imports from it were 50,140, of which only 8 were diseased. In 1876 there were 57,966 imported, of which none were diseased. He thought, therefore, he might ask their lordships whether, in the instance of Denmark, there was not an overwhelming case for exemption from the schedule of dangerous countries. Certainly, it appeared to him that in the case of such a foreign country as Denmark the Privy Council might be intrusted with that discretion which the Bill vested in them as regarded the home trade. (Hear, hear.) On a former occasion his noble friend the Lord President told their lordships that the compulsory provision in respect of the foreign trade was necessary for the stamping out of the disease. In reply to that he endeavoured on the second reading to show that the provision could not have such an effect. He would not go over the evidence he quoted on that occasion, but he would call their lordships' attention to some evidence which had been given before the select committee of that House, to which the Bill had been since referred. Professor Simonds, who was examined before that committee, was the Principal of the Royal Veterinary College, and was a veterinary surgeon who for years had been connected with the Veterinary Department of the Privy Council. How did he describe the measures which he thought ought to be adopted? He said:

"I think that the movement of all animals should be stopped in counties where the foot-and-mouth disease exists, that is to say, that they should only move by licence in districts or departments which are free from disease. It would also be necessary to suppress fairs and markets and public sales. These are strong measures, but would be the chief measures that we should find absolutely necessary for the purpose of eradicating contagious diseases."

Then, what was Mr. Booth's opinion on the same subject? When that witness was under examination by Mr. W. E. Forster, these questions and answers occurred:

"2403.—What would you do with the large markets? If necessary, I should not hesitate to stop them for the time being. There are always sources of meat supply.

"2404.—Would not that really imply the stoppage of all the large markets? It does not follow at all.

"2405.—Take the market at Norwich-hill; supposing that foot-and-mouth disease was in the county of Norfolk (I do not

know whether it is or not), do you still think you would have any chance of stamping out the disease if you allowed any cattle to go to Norwich? If the foot-and-mouth disease broke out in the district of Norfolk, I should stop the market at once.

"2406.—My object is to find out what would be the inconvenience to the trade generally of these stamping-out regulations, and therefore I want to know what you consider that it would be necessary to do. Do you think it wonld be enough merely to stop the market when you knew that foot-and-mouth disease was existing? I should not allow an animal to be moved outside a district in which foot-and-mouth disease was prevalent. I should take a certain large area and then stop the total movement of cattle in that district, as is done in Germany in case of an outbreak of cattle plague."

Before the Select Committee of 1877 on the Cattle Plague and the Importation of Live Stock, Professor Brown suggested certain measures. He said:

"I should make certain alterations in the present system of dealing with these diseases, or I should make a radical change, abandoning the present system altogether, and adopting an entirely new one in its place. First of all, having regard to the existence of these two diseases in this country, I should feel bound to impose very severe restrictions upon the cattle trade. Both in reference to foot-and-mouth and pleuro-pneumonia there can, I think, be no question whatever that the infective matter is chiefly conveyed through the movement of diseased and infected animals. Therefore, I should be obliged to adopt such a system as would entirely prevent this movement. In order to do that, I should be compelled to divide the whole country into districts, placing each one in charge of an inspector, who would be in constant communication with the central department. Having found all the centres where either disease exists in the district, it would be absolutely essential to prevent the movement of animals from those centres during the continuance of the disease."

In the Select Committee of the present Session, Mr. Wilson recommended the internal restrictions so proposed by Professor Brown. He asserted, and he did not think it was denied, that the provisions of this Bill would not stamp out foot-and-mouth disease. The clause which they were now considering was directly in the teeth of the report of the Committee of 1877 upon which this Bill professed to be founded. The Select Committee on cattle plague and importation of live stock, 1877, in their report said—"And your committee are of opinion that no further restrictions should be placed on the importation of foreign animals in respect of foot-and-mouth disease and pleuro-pneumonia, unless at the same time orders be enforced throughout Great Britain that in every district where either pleuro-pneumonia or foot-and-mouth disease exists, and which has been declared by the Privy Council to be infected, all movement of cattle be prohibited except under licence; that fairs and markets be under

similar restrictions, and that absolute prohibition of movement be enforced against infected farms for periods varying from two months in pleuro-pneumonia to twenty-eight days in outbreaks of foot-and-mouth disease."

It was unjust and unreasonable to impose restrictions on the foreign trade when they were not going to impose restrictions on the home trade. (Cheers.) What was good for one was equally good for the other. His noble frîend when he introduced this Bill gave some statistics with respect to the number of cattle existing in this country and the number of cattle imported from abroad, and he instituted a comparison to show how unimportant was the foreign importation. He (the Marquis of Ripon) thought the figures were erroneous. His noble friend took the whole number of cattle existing in this country. Of course, he ought to have compared the number of cattle in the home market in any one year with the number of animals imported for consumption from abroad. But, be that as it might, he believed he should not be contradicted when he said that a comparatively small restriction on importation of cattle from abroad might lead to a considerable increase in price. (Hear.) His noble friend, with all his official experience, said to their lordships last year:

"He could give an illustration of the effect of putting a check on the importation of animals into this country. During the six years ending 1869 the country imported from France 112,618 cattle; but in 1870 France was placed in the scheduled countries, which meant that all animals coming from France had to be slaughtered at the port of debarcation or undergo a quarantine; and those restrictions were so stringent that in the seven years following 1869 the number imported was only 24,095, showing a very great distinction between the two periods."

He (the Marquis of Ripon) therefore contended that the first effect of this Bill, at all events, must be to raise the price of meat. He wished to ask whether this was a proper time to try the experiment proposed by this Bill. Peace and war were possibly trembling in the balance; and was this a time to take experimental measures which might increase the price of meat, and which would certainly restrict the discretion which the noble lord now possessed? Next winter might be a hard one, but if this Bill passed the noble lord opposite would be unable to relax the provisions of this Bill if it once passed into law, however high the price of meat might become. The measure appeared to him to be one of a most objectionable character, and it had been stated of it that it was framed in the interest of the agriculturists. He, however, denied that this clause would operate in the interest of those engaged in agriculture. The short answer that had been made to the clause was that it was framed with the view of renewing agricultural protection. The noble lord opposite, on his own behalf, had repudiated the correctness of that allegation, and he entirely accepted the noble lord's statement so far as he was personally concerned; but he was not equally clear with regard to the intentions of those who were

pushing the noble lord forward, because he was assured that the practical effect of this measure would be to bring about a renewal of protection. (Hear, hear.) He desired especially to know how the noble lord was going to defend the interference with the cattle trade of Denmark under the provisions of this Bill. Turning to the exact effect which his amendment would have on the existing law, he remarked that it would make a large alteration in the existing system regulating the importation of cattle, by establishing presumptions of law which would make slaughter at the port of entry the rule and the free importation of live cattle the exception. He approved the most stringent regulations being made for the prevention of the importation of diseased cattle into this country, and he would leave the noble lord full liberty to make such terms with foreign countries as would secure the free importation into this country of healthy cattle. He earnestly begged their lordships to adopt his amendment, because it was in entire accordance with the general principles which pervaded every part of this Bill with the exception of this single clause, because it would remove from the measure the aspect of protection which it now possessed, and because it would give the Privy Council the most ample powers to prevent the importation of diseased cattle, while it would secure to the great mass of the people the great benefit of cheap meat. The noble lord concluded by moving the following amendment:—

"Clause 33, page 17, line 15, at end of clause add—'Provided that the Privy Council may from to time, if they think fit, by order or by licence in relation to foreign animals of all or any kinds brought from all or any countries to all or any ports, modify or suspend, subject to such conditions and restrictions as they think fft, the provisions of the said schedule relating to slaughter or to quarantine.'" (Hear, hear.)

The Duke of Richmond and Gordon, having had so many opportunities of addressing their lordships on the subject of this Bill, would confine his remarks on the present occasion within the briefest possible compass. He must, in the first place, deny that this Bill had been framed solely in the interest of the agricultural class; on the contrary, it had been framed in the interest of the general community, without regard to any particular class. He also denied that the measure had been framed with the view of reverting to the system of protection. He regretted that it was entirely out of his power to accept the amendment as proposed by the noble marquis, which was opposed to the essential spirit of the Bill. The great object of the Bill was the prevention of the importation of diseased cattle. Another object of the Bill was to stamp out such disease as might exist or arise without putting undue restrictions upon the trade of the country. This, of course, could not be effected without putting a restriction to some extent upon the home trade, and it would be unfair to take such a step without giving a counterbalancing advantage by enacting that cattle

imported from abroad should be slaughtered at the port of debarcation, and that so the danger of disease being imported should be minimized. The noble marquis had laid great stress upon the fact that in certain countries from which cattle were imported very little disease existed, although it was proposed to restrict the importation from those countries. The answer to this was that Norway was the only one of the five countries absolutely free from disease, that the number of cattle imported from that country in the year 1877 was only 110, and that it was not worth while endangering our own flocks and herds in order to obtain so small an addition to the food supply of this country. (Hear, hear.) Outside the restricted districts trade, if the Bill passed, would be as free as it had ever heretofore been, and he was happy to be enabled to state to their lordships that for a long time past there had not been so little cattle disease in the country as during the last eighteen months. (Hear, hear.) The assertion that the passing of the Bill would lead to an increase of the price of meat was a mere conjecture—one which he had no doubt would not be justified by the result. He was compelled, therefore, to meet the amendment of the noble marquis with a direct negative.

Viscount Cardwell said the noble duke had stated his desire not to deal with the foreign trade in a less favourable manner than he did with the home. If that were so, the noble duke might well accept the amendment of his noble friend. If he did the noble duke would give an effectual answer to the charge that the Bill was intended to protect the agricultural interest.

The Marquis of Salisbury said the object of the Bill was to increase the quantity of food in this country and so to cheapen its price. For the purpose of doing that it was absolutely essential that they should give confidence to the producer of food in this country that the investment of his capital will not be made in vain in consequence of the introduction of foreign disease. It was the producer of food in this country who furnishes the consumer with some 16-17ths of all that was consumed, and therefore it was the producer of food whose confidence must be encouraged. To produce that confidence they must have a fixed policy. They all had confidence in his noble friend the President of the Council, and if they could pass an Act of Parliament that he should live for ever and hold the office for ever no doubt all would be right; but since they could insert neither of these provisions they must take precautions, and therefore the policy by which they wished to increase the protection of food in this country must be placed, not at the caprice of any Executive Government that may be in power, but under the sanction of Parliament itself. That was the issue now before the Committee. They ought not to be misled by references to Canada, America, or Ireland. Ireland was going to be placed under the provisions of this Bill. The United States and Canada were at such a distance that the voyage itself was a natural guarantee.

The Duke of Richmond and Gordon was sorry he could not acquiesce in the proposal of the noble lord to strike out the 78th clause. That clause had been inserted after consultation with the Lord-Lieutenant of Ireland and those competent to advise him. In their opinion it was necessary to the proper working of the Act. There was no new principle involved in the clause which was not inserted for the first time. It was intended merely to carry out the law as it now existed. With regard to the Veterinary Department in Ireland, it was certainly true that it did not present a report to Parliament, as the department in England did, and some of the witnesses from Ireland described the department as unsatisfactory. He would inquire into the matter, and see whether there was any feasible mode of strengthening the department so as to enable it to command as much respect in Ireland as the sister department certainly did in this country.

The clause was ordered to stand part of the Bill.

The remaining clauses and schedules were agreed to, and the Bill was reported.

The other orders were disposed of, and the House adjourned at 8 o'clock.

After a few words from the *Marquis of Huntly* and *Viscount Powerscourt* against the amendment, the House divided with the following result—

Contents	36
Non-Contents	133
Majority	—97

The amendment was therefore lost and the clause was added to the Bill.

Clauses were agreed to up to Clause 77 inclusive. On Clause 78, which provides that in Ireland the Lord-Lieutenant and the Privy Council may from time to time issue orders for certain purposes,

Lord Emly, who had on the Notice Paper an amendment for the omission of the clause, said it was of the utmost importance that the Bill should be efficiently administered in Ireland as well as in England and Scotland, for laxity in Ireland might involve as much danger as the importation of cattle from Spain and Portugal. If this danger in Ireland were to be avoided, either the Bill must be administered in Ireland by the English Privy Council or else the Veterinary Department of the Irish Privy Council must be considerably strengthened. One of the most interesting portions of the report of the Privy Council in England was the report of the Veterinary Inspector, but the name of Ireland never occurred in his report, and it was certainly desirable that corresponding information relating to Ireland should be obtained and recorded.

The Earl of Longford expressed his concurrence in the remarks of the noble lord.

Earl Spencer said the point was one on which he should be glad to hear the opinion of the Executive Government in Ire-

land. At first sight it seemed desirable that the whole administration of this law should be under one head, but the separate government of Ireland rendered it difficult to carry out this view. At the same time, since he was Lord-Lieutenant, a very considerable change had been made by constituting Boards of Guardians local authorities under the Act relating to pleuro-pneumonia, and empowering them to act in precisely the same way as local authorities in England. One advantage, probably, in separate administration would be greater rapidity of action than would be possible if it were necessary to refer to London instead of Dublin. He hoped the noble duke would do something to strengthen the hands of the Veterinary Department in Ireland.

HOUSE OF LORDS, *May 28th.*

On the report of amendments of the Contagious Diseases (Animals) Bill,

The Marquis of Ripon asked the Lord President whether in the Privy Council returns information would in future be given on the subject of foot-and-mouth disease, as well as on that of pleuro-pneumonia.

The Duke of Richmond and Gordon said that the information on foot-and-mouth disease had been discontinued in the reports in consequence of the difficulty and expense of compilling it. He would, however, have it supplied.

The report was then received.

HOUSE OF COMMONS, *May 28th.*

Mr. Forster said the House was doubtless aware that the Contagious Diseases (Animals) Bill had been under consideration in another place, and would shortly come down to the House. He hoped the Chancellor of the Exchequer would not take the second reading before Whitsuntide, in order that the House might have time to consider the altered provisions.

The Chancellor of the Exchequer said the Bill certainly could not be taken before Whitsuntide. The Government was anxious to proceed with Committee of Supply.

ARMY CIRCULAR, 1878.

[We are indebted to the Principal Veterinary Surgeon to Her Majesty's Forces for the subjoined copy of the Warrant relating to the veterinary department of the army. Much praise is due to this gentleman for having been able to secure such liberal terms to members of the profession who hold Her Majesty's Commission.]

ROYAL WARRANT—VETERINARY DEPARTMENT.

VICTORIA R. WAR OFFICE, 1*st May*, 1878.

WHERRAS We deem it expedient to alter the terms and conditions of service in the Veterinary Department of Our Army;

OUR WILL AND PLEASURE IS that Articles 409 to 415, and

1023 to 1026 of Our Warrant of 27th December, 1870, and Article 143 of Our Warrant of the 13th August, 1877, so far as it applies to Veterinary Surgeons, be cancelled, and that from the 1st April, 1878, the following rules shall be established and obeyed as the sole and standing authority on the matters herein treated of.

1. The ranks and rates of pay of the Officers of the Veterinary Department of Our Army shall be as follows :—

	Daily. £	s.	d.
Principal Veterinary Surgeon . £750 a year, inclusive of all allowances.			
Inspecting Veterinary Surgeon . . .	1	5	0
After 25 years' service . . .	1	7	0
„ 30 „ . . .	1	10	0
Veterinary Surgeon of the 1st Class . .	0	16	0
After 5 years' service as such . .	0	18	0
„ 10 „ . .	1	0	0
„ 15 „ . .	1	2	0
„ 30 years' total service . . .	1	4	0
Veterinary Surgeon on appointment . £250 a-year			
Veterinary Surgeon appointed before the date of Our present Warrant—			
Under 5 years' service	0	10	0
After 5 „	0	12	0
„ 10 „	0	14	6

2. The pay of Officers of the Veterinary Department shall be issued monthly in arrear.

3. The relative rank of the Officers of the Veterinary Department shall be as follows :—

I. Principal Veterinary Surgeon shall rank as Colonel.

II. The Inspecting Veterinary Surgeon acting as Principal Veterinary Surgeon in India shall rank as Lieu-Colonel.

III. Inspecting Veterinary Surgeon shall rank as Major; but junior of the rank, except for choice of quarters.

IV. Veterinary Surgeon, 1st Class, shall rank as Captain.

V. Veterinary Surgeon shall rank as Lieutenant.

4. The relative rank of these Officers shall carry all precedence and advantages (except as regards forage allowance, and in certain cases choice of quarters), attaching to their corresponding military rank, and shall regulate detention and prize-money, allowances granted on account of wounds or injuries received in action, and pensions and allowances to widows and families.

5. Forage, or the pecuniary allowance in lieu thereof, shall be granted to an Officer of the Veterinary Department for the number of horses necessarily kept by him for duty.

6. A candidate for the Veterinary Department shall possess the diploma of the Royal College of Veterinary Surgeons, and shall be required to pass an examination before a Board of Military Veterinary Surgeons, and fulfil such further conditions as may be prescribed from time to time by our Secretary of State.

7. A candidate who shall have proved after examination that

he possesses a competent knowledge of the required subjects shall receive a commission as Veterinary Surgeon for a limited period of ten years' service.

8. The services of a Veterinary Surgeon appointed after the date of Our present Warrant shall be dispensed with on the completion of ten years' service, unless he be specially selected, for further employment in the Veterinary Department, or, if he be unwilling to continue to serve therein, and he shall be entitled to receive in lieu of all pension or retirement, pension for wounds excepted, the sum of eight hundred pounds.

9. A Veterinary Surgeon appointed after the date of Our present Warrant of less than 10 years' service, who may be disqualified for duty by ill-health, certified by a Board of Medical Officers to have been contracted in and by the Service, may, at the discretion of Our Secretary of State, be granted half-pay at the rates specified in Article 19, for a period not exceeding six months at one time. In special cases in which the circumstances may appear to Our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in the service.

10. At the expiration of that period of six months, if the Veterinary Surgeon so appointed be able to resume his duties he shall be entitled to complete his term of 10 years' service. If he be unable to resume duty, as certified by a Board of Medical Officers, he shall, if he have not served five years, be allowed to remain upon the half-pay list for a fnrther period of six months, without half-pay; at the expiration of which period, if still unable to resume duty, his services shall be dispensed with.

11. If the Veterinary Surgeon so appointed have served five years on full-pay, and be unable to resume duty as certified by a Board of Medical Officers, his services shall be dispensed with, and he shall be entitled to receive, in lieu of all further pay or non-effective pay, pension for wounds excepted, a gratuity at one of the following rates, viz:—

If he shall have completed	9	years'	full-pay	service ...	£720
,, ,,	8	,,	,,	...	640
,, ,,	7	,,	,,	...	560
,, ,,	6	,,	,,	...	480
,, ,,	5	,,	,,	...	400

12. If a Veterinary Surgeon so appointed be unable to complete his 10 years' service from any cause other than reduction of establishment, wounds or ill-health, certified by a Board of Medical Officers to have been caused in and by the Service, he shall be allowed not more than six months' leave without pay, at the expiration of which period, if unable to resume duty, his services shall be at once dispensed with, and he shall have no further claim on the Department.

13. If the services of an Officer be temporarily dispensed with in consequence of a reduction of establishment, he shall be granted the rates of half-pay fixed by Article 19, until there be an opportunity of re-employing him, or, if he have served five

years, he may retire from the Service with a gratuity according to the rates specified in Article 11.

14. Every year it shall be competent for Our Commander-in-Chief, on the recommendation of the Principal Veterinary Surgeon, to select, with the approval of Our Secretary of State, a number of Veterinary Surgeons not exceeding four, who shall be retained in the service.

15. A Veterinary Surgeon shall be eligible for promotion to the rank of First Class Veterinary Surgeon on completing 12 years' service.

16. A Veterinary Surgeon of the First Class shall serve 15 years in Our Army as a Commissioned Officer before he shall be eligible for promotion to the rank of Inspecting Veterinary Surgeon.

17. All promotion from the rank of Veterinary Surgeon to that of Veterinary Surgeon of the First Class, and from the rank of Veterinary Surgeon of the First Class to that of Inspecting Veterinary Surgeon shall be given for ability and merit upon the selection of Our Commander-in-Chief, with the approval of Our Secretary of State, and the grounds of such selection shall be stated to Us in writing and recorded in the Department. In all such cases the amount of foreign service shall be expressly stated.

18. Officers of the Veterinary Department shall have a right to retire after 20 years' service. Inspecting Veterinary Surgeons, Veterinary Surgeons of the 1st Class, and Veterinary Surgeons, shall be placed on the Retired List when they shall have attained the age of 55 years.

Non Effective Pay.

19. An Officer of the Veterinary Department placed on half-pay by reduction of establishment, or on the report of a Medical Board, in consequence of wounds or ill health, caused in and by the discharge of his duties, or placed on the retired list under Art. 18, on account of having attained the age of 55 years shall (subject to the provision in Article 21) be entitled to half-pay or retired pay at the following rates :—

	Daily £	s.	d.
Principal Veterinary Surgeon	£500 a year		
Inspecting Veterinary Surgeon—			
After 30 years' service . . .	1	1	0
„ 25 „ . . .	0	19	0
„ 20 „ . . .	0	17	6
Veterinary Surgeon, 1st Class—			
After 25 years' service . . .	0	16	0
„ 20 „ . . .	0	13	0
„ 15 „ . . .	0	10	6
Veterinary Surgeon—			
After 15 years' service . . .	0	9	6
„ 10 „ . . .	0	8	6
„ 5 „ . . .	0	7	0
Under 5 „ . . .	0	4	0

20. The rate of half-pay awarded to an Officer retiring for his own convenience after 20 years' service on full pay under Article

18 shall not exceed one half of the rate of full pay of which he was in receipt at the time of retirement.

21. The rate of half-pay awarded to an Officer retiring for his own convenience after 25 years' service on full pay shall not exceed seven tenths of the daily pay he may have been in receipt of when thus retiring on half-pay, provided he shall have served three years in his rank or shall have served abroad for 10 years in all ranks, or for five years with an army in the field. An Officer of 25 years' service whose service falls within neither of these conditions shall be entitled only to seven tenths of the daily pay received by him prior to his last promotion.

22. An Officer of the Veterinary Department placed on half-pay from any other cause shall be allowed only a temporary rate of half-pay (not exceeding the rates specified in Article 19) for such period and at such rates as Our Secretary of State shall decide, with reference to the services rendered to the public by such Officer.

General Regulation.

23. In all matters not specially provided for in Our present Warrant, the Officers of the Veterinary Department shall be subject to the General Regulations for the Departments of Our Army.

Given at Our Court at Osborne, this 22nd day of April, 1878, in the 41st year of Our Reign.

By Her Majesty's Command,
FRED. STANLEY.

Additional Regulations.

Candidates will be required to pass a medical examination as to their physical fitness for the service. They must also not be over 26 years of age, and unmarried.

Candidates on joining will be required to serve a probationary period not exceeding six months; if not then approved of their services will be dispensed with.

Applications for admission to the Veterinary Department of the Army should be addressed to the Principal Veterinary Surgeon, War Office, London, accompanied by a certificate of age, and testimonials of character and qualifications.

J. Collins, P. V.S.

THE FITZWYGRAM PRIZE COMPETITION.

This prize competition, which will take place *on 13th June*, 1878, is open to students of the Veterinary Schools in this country, and also to graduates of the Royal College of Veterinary Surgeons who have obtained their diploma since the previous competition.

The prizes are three in number. The first is of the value of £50; the second £30; the third £20.

The competition will consist—first, of a written; and second, of a practical and *vivâ voce* examination on subjects pertaining to veterinary science.

1200 marks will be assigned to the first part, and 600 marks to the second part.

In the first part the marks will be assigned as under:

Anatomy, 300; Physiology, 300; Pathology, 300; Chemistry, 150; Botany, 75; and Materia Medica, 125.

The time allowed for the written examination will be as under—

Anatomy, 3 hours; Physiology, 3 hours; Pathology, 3 hours; Chemisty, 1½ hours; Materia Medica, 1½ hours; Botany, 1½ hours.

In the second part the marks will be assigned as under:

Diagnosis of Disease, 200; Shoeing, 100; Examination for Soundness, 200; Selection of Horses for Specific Purposes, 100.

A competitor failing to obtain *half the number* of marks assigned to any of the papers in the written examination will be excluded from the second or *vivâ voce* examination.

The first portion of the examination will take place in London for the Royal Veterinary College, and in Edinburgh and Glasgow for the Scotch Schools.

The names of intending competitors are to be forwarded to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, *at least one week* before the date of competition.

The donor will pay the railway fares of each of the selected competitors to and from the place at which the practical examination is held.

THE RECENT EXAMINATION OF STUDENTS—CORRECTION OF REPORT.

At the Examinations of the Students from the Royal Veterinary College in April last, the gentleman who distinguished himself by passing with Very Great Credit was Mr. John Richard Carless, of Stoke-on-Trent; and not Mr. William A. Hancock. Wm. H. Coates, *Secretary*.

OBITUARY.

We have to record the death of Mr. Ward, M.R.C.V.S., Crediton, Devon. Diploma dated April 28th, 1862. Also of Mr. George Yeomans, M.R.C.V.S., London. Diploma bears date August 11th, 1847.

The following deaths have been reported to the Registrar:—Mr. Adam P. Duncan, M.R.C.V.S., late Carlow, Ireland; diploma dated April 16th, 1867. Mr. James Rendle, M.R.C.V.S., Beaminster; diploma dated April 14th, 1819. Mr. Wm. Low, M.R.C.V.S., Waring, Essex; diploma dated Jan. 25th, 1843. Mr. Wm. Cross, M.R.C.V.S., Colchester; diploma dated March 6th, 1832. Mr. John Milnes, M.R.C.V.S., late Cheltenham; diploma dated April 21st, 1864. Mr. Thomas Allan, M.R.C.V.S., Delvin-by-Caputh, Perthshire; diploma dated April, 1830. Mr. Frank le Good, M.R.C.V.S., late Glastonbury; diploma dated Feb. 18th, 1834. Mr. Allan Murray Wilson, M.R.C.V.S., Limerick; diploma dated April 26th, 1869.

The following have also been reported to the Registrar by the Military Secretary, India Office:—Mr. R. Burgess Parry, M.R.C.V.S., E.I.C., Bengal. His diploma bears date July 1st, 1824. Mr. Francis Rogers, M.R.C.V.S., E.I.C., Bengal. His diploma bears date July 30th, 1827. Mr. L. M. Rogers, M.R.C.V.S., E.I.C., Bombay, who died 17th Feb., 1878. His diploma bears date Feb. 21, 1828.

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Communications and Cases.

REMARKS ON THE BROAD TAPEWORM (*BOTHRIOCEPHALUS LATUS*).

By T. Spencer Cobbold, M.D., F.R.S., F.L.S., Professor in the Royal Veterinary College.

Notwithstanding the efforts that have been made to clear up the natural history of this worm, we are still in doubt as to the source and migrations of its larvæ. Dr. Knoch, of St. Petersburgh, sought to make it appear that an intermediate host was unnecessary, and he went so far as to state that certain feeding experiments, performed by him on dogs, afforded conclusive evidence on this point. Professor Leuckart, however, explained the source of Knoch's errors of interpretation. Although Knoch administered eggs of *Bothriocephalus latus* to dogs, and afterwards found young tapeworms of the species in question in the intestines of the dogs, it did not logically follow that any genetic relation (as between the egg-contents and the adult worms) had been thereby established. The circumstance that ripe ova of the Bothriocephalus always contain six-hooked embryos, must alone imply that an intermediate host is necessary for the formation of Cysticerci or measles. If the broad tapeworm could be reared in a direct manner, by the administration of Bothriocephalus eggs, there would be no need for the presence of boring hooklets in the proscolex. As is well

known, Professor Leuckart long ago demonstrated the existence of hooks in the ciliated embryos of this cestode.

The broad tapeworm, though abundant in Russia, Scandinavia, and Switzerland, is comparatively rare in this country and in Holland; at least it is seldom found in human patients, though, perhaps, it is somewhat more common in dogs. Like Dr. Fock I have only seen two cases in man. The Museum of the Royal Veterinary College contains several examples of this worm, the most perfect specimen being from a dog which was the property of the present Chairman of the Board of Governors of the College, C. N. Newdegate, Esq., M.R. Practically it may seem to matter little what particular species of cestode are present in dogs placed under treatment for tapeworm; but this is a mistake. Some Tæniæ yield more readily to treatment than others, and whilst in man the beef-tapeworm (*Tænia mediocanellata*) is more easily expelled than the pork-tapeworm (*T. solium*), a similar rule holds good with the canine tapeworms. The armed species are more difficult to expel than the unarmed. In the dog all the true Tæniæ are armed with cephalic hooks, whilst all the species of Bothriocephalus are unarmed. In future it is to be hoped that veterinary practitioners will take more care in ascertaining the species of tapeworms obtained from their canine patients.

My especial object in writing these few remarks is to call attention to an interesting human case of *Bothriocephalus latus*, for the particulars of which I stand indebted to Dr. Fock, of Utrecht. Dr. Fock has been very successful in the treatment of tapeworm by the administration of pomegranate-root bark. What, however, has interested me most is his suggestion that the broad tapeworm arises from the consumption of the common small fresh-water river fish which we call the bleak (*Leuciscus alburnus*). It appears that the Jews in Holland are much infested by the broad tapeworm, and that they are particularly fond of this piscine dainty. This circumstance has suggested to Dr. Fock that possibly the little bleak may harbour the larva or measle of the broad tapeworm. Leuckart, it must be remembered, long ago pointed to the various species of Salmonidæ as probably forming intermediate bearers of Bothriocephalus; yet, so far as I am aware, no one has at present actually described the piscine measle or Cysticercus which could fairly be regarded as the scolex of this cestode. I have myself had no opportunity of investigating the matter practically, but it seems to me that there ought to

be no difficulty in setting the question at rest. A great many kinds of entozoa infest roach, dace, chub, and their allies, but neither in these fish, nor in the members of the salmon-trout family, have I encountered any larval cestodes. Of the cestodes infesting these fishes there are several species of *Bothriocephalus*, *Ligula*, and *Caryophyllæus*. Of course none of these mature worms could have any connection with the human or canine Bothriocephali; nevertheless Dr, Fock in his communication incidentally alludes to one of these worms. This was probably *Caryophyllæus mutabilis*. I will quote his own account of the interesting case in question. Writing from Utrecht on the 30th of December last, Dr. Fock, after referring to a former case, writes as follows :—

"Permettez moi, cher confrère, que je rappelle à votre souvenir que vous avez eu l'obligeance de communiquer au public une observation, de ma main, sur un cas très rare de ver rubanaire, d'un Bothyrocephale, chez une petite fille juive. Malheureusement je n'ai pu en donner de plus amples détails, parceque cet enfant n'a plus, depuis ce temps là, rendu la plus petite parcelle de ver. Il y a maintenant quinze mois, et voilà que de nouveau un cas pareil se présente. Une femme mariée, frisonne, et, cette fois-ci encore, juive, s'est adressée à moi pour la débarasser de son ver. Elle me disait avoir rendu, il y a quelque temps, des fragments, ou plutôt un fragment de la longueur d'un mêtre, d'un ver solitaire, pour lequel elle avait été traitée, sans succès, par son médecin ordinaire. A cause de cela elle s'adressa à moi, et je lui ai repondu qu'elle devrait revenir la première fois qu'elle rendrait de nouveau, spontanément, un nouveau fragment. Après un mois d'intervalle elle est revenu en me montrant un fragment de la longueur d'un demi mêtre qu'elle venait de rendre spontanément, après avoir jeûni par précepte réligieuse, et deux jours après cela, traitée par l'écorce de grenadier, elle a rendu un Bothryocephale parfaitement conditionné en entier.

"Ce cas me semble assez intéressant pour être communiqué de nouveau, d'abord parceque jusqu'ici personne n'a pu dire par quel chemin a pu s'introduire un tel helminthe, et ensuite parceque ce chemin doit se présenter bien rarement dans nos contrées (ou en Angleterre) puisque dans le courant d'une trentaine d'années ayant rencontré des centaines de tænias, ce cas ci est seulement le second dont je suis gratifié. Il me semble digne de réflexion que ce cas ci se présente cette fois ci de nouveau chez une juive. Est ce cas ci fortuit, ou bien y-a-t'il un lien de causalité entre

ce ver rare et le genre de nourriture ou de boisson de ces bonnes gens? La dame me recontait que en Frise, il y a un poisson très recherché qui s'appelle en Hollandais blèck, en Anglais blay ou bleak, et dont ils sont très friands, dans lequel, ils rencontrent très souvent un très grand ver rubanaire. Une autre personne me disait avoir été à table chez un ami, que ne sachant probablement pas ce qu'il mangeait, savoura avec beaucoup de délice cette friandise dégoutante."

After describing the specimen, Dr. Fock concludes his interesting remarks with a suggestion as to the possibility of introducing tapeworm into the human body by potable water, into which cysticerci have accidentally found their way. Dr. Fock remarks:—"J'ajoute une réflexion par rapport à la provenance des autres tænias, qui jusqu'ici sont introduits par l'usage de la viande non assez cuite ou rôtie, ou saignante; mais, ne se pourrait-il pas que des débris de la chair d'un animal ladre fussent introduits fortuitement dans l'eau, par example, d'un fossé, et que celle ci emploiée comme boisson contint des cysticerques et par ainsi aussi une cause de tænia? Ce n'est qu' une conjecture que je propose en terminant cet article."

As in a previous number of this journal I have already demurred to the notion that Cysticerci are capable of enjoying an independent existence in water, I will only add an expression of regret that I cannot agree with my friend Dr. Fock in regarding water, contaminated in the way he suggests, as a probable, or even a possible, source of tapeworm in the human subject.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 353.)

THE GROSSALES.

The Grossal or Gooseberry Alliance, which is now to occupy our attention, is distinguished as follows:—

Diagnosis.—*Epigynous Exogens, with dichlamydeous polypetalous flowers, numerous minute seeds, and a small embryo lying in a large quantity of albumen.*

Professor Lindley gives the following notes of the alliance founded by himself:—

"This group evidently touches the last (the Cactales) where Indian figs are so like currantworts that they used to be considered the same order; and it passes into the next through Escalloniads, whose fruit would be that of cranberries if it were fleshy, or through Syringas, which may be compared with Columelliads. The order of Barringtonials exhibits the alliance in its highest state of development, and effects a union with the wide frontier of Myrtals. At the same time the Escalloniads and Currantworts extend towards the Saxifragal alliance, especially to Hydrangeads, to which a part of the Syringas is sometimes referred.*

This alliance includes four natural orders, containing somewhat over 200 species. We shall describe the following:

CURRANTWORTS.

1. GROSSULARIACEÆ—*Fruit pulpy.*

SYRINGAS.

2. PHILADELPHACEÆ—*Fruit capsular.*

1. *The Currantworts* are well known to us through the gooseberries and currants of the garden. Of the farmer somewhere about 700 sorts have been recorded, and there must be almost as many currants; indeed, it would appear with both fruits that new sorts are constantly arising, but it will be sufficient for our purpose to mention the prickly-stemmed shrub, as the gooseberry, and the smooth-stemmed ones, as the red and black currant.

Mr. Richard Thompson tells us that "the rough and hairy gooseberry has been called *R. grossularia,* and the smooth one *R. uva-crispa;* but there is no difference between them, except as regards the surface of the fruit, for seeds from one bush will produce both rough and smooth-fruited plants. The gooseberry is called in Cheshire and in the north of England *Feaberry* (according to Gerarde, a contraction of *Feverberry,* the fruit being considered a sort of specific against fevers); in Norfolk it is called *Feabes;* in Scotland, *Gromet* or *Gromerts;* by the Germans, *Krausel-beere* or *Stachel-beere;* by the Dutch *Kruisbes* or *Kruisberie;* and by the Danes and Swedes *Krusbaar,* which is nearly identical with the Dutch name. The French call it *Groseille,* formerly written *Groiselle* or *Groisselaten,* according to Decandolle, and these names bear much analogy to the old Scotch name *Gromet.* The French use the fruit for making a sauce for mackerel, and hence call it *Groseille à maquereau;* and we find it frequently stated

* 'Vegetable Kingdom,' p. 749.

in books that it is called gooseberry from being used as a sauce for young or green geese. This, however, must be an error, for when Queen Elizabeth received the news of the destruction of the Spanish Armada, on September the 29th, she was eating goose, and that day has since been noted as about the time when young geese are in season; but there are then no green gooseberries to be had for sauce."*

This author states the gooseberry to be wild in Britain and many other parts of Europe. This, however, is disputed by some, and we think without reason.

We cannot agree that Queen Elizabeth could not have eaten gooseberry sauce with green goose in September, as even if the green fruit was required it could be preserved for the purpose; but there is reason to believe that ripe gooseberries and gooseberry preserve were used as sauce to meats, as red currant jelly at the present day, and the Americans preserve ripe cranberries to this day as sauce for goose, and as in both the subacid flavour commends the sweeter or game-like meats to the palate, so fruits of this quality of various kinds have been employed, that most familiar example, viz. that of apple-sauce with us, when the Americans use cranberries, and the ancients employed gooseberries.

The gooseberry either preserved green (which by the way is a great art), or made with sugar into the well-known jam, is a grand institution, and now that sugar is less than half the price it used to be, the cottager with his small fruits ought to have a wholesome and agreeable substitute always at hand, instead of wasting money on the more expensive butter, or more frequently *butterine*, which is made from anything else than milk.

Both red and black currants are in constant request in the ripe state for making currant-pies, and besides this, so extensively are they cultivated that an overplus is always in demand for jams, jellies, wines, &c. As regards the black currant, its fruit is much in demand for making currant paste and currant lozenges, both highly esteemed, if not as a medicine, at least as a valuable auxiliary in medical treatment.

Much discussion has arisen amongst botanists as to whether the gooseberry and currant are native plants. The general spread of the genus over the whole of the temperate regions of the northern hemisphere, and their being so numerous in North America, seems to make it likely

* The 'Treasury of Botany,' p. 982.

that it is entitled to rank as British, and more especially when we find it scattered so abundantly in the woods, hedges, and along the water-courses of our island.

Dr. Syme figures no less than seven forms of Ribes as found in Britain; these are, for the most part, distinct from the cultivated ones, and though known by several names, we believe that the three we have referred to, viz. *R. grossularia*, *R. rubra*, and *R. nigrum*, are the only really distinct ones.

2. The Syringas are only known to us by a few favourites of the greenhouse and the garden; of these are the *Philadelphus syringa*. The Syringa of the shrubbery is a beautiful white-flowered plant, the flowers of which have a peculiar and not disagreeable perfume, for which at one time its essential oil was separated to adulterate the far more agreeable oil of jasmine.

The Deutzias of the shrubbery and greenhouse are well known for their profusion of white flowers, for which reason they take the place at weddings usually allotted to the orange flower. The rough leaves of *D. scabra* are said to be used in Japan by polishers, and its inner bark for poultices, but it must be confessed that as a rule the natural order of Philadelphaceæ is more remarkable for beauty than utility.

OPERATION FOR UMBILICAL HERNIA IN THE HORSE.

By R. H. Dyer, M.R.C.V.S., Limerick.

Umbilical hernia is not unfrequently met with in young animals, and several methods of reducing it have from time to time been recommended. I take it that the operation should be simplified as much as possible. In a case of umbilical hernia, the veterinary surgeon need not have recourse to the modes I have heard of, from the fact that an extremely simply arrangement will suffice.

It seldom happens that adhesion of the intestine to the integument is present, which can be readily ascertained by manipulation. Having cast the animal, and placed him in position on his back, introduce a good sized iron needle, about four inches long, with a blunt head at one end, which one's farrier will make. After grasping as much of the common integument with the left hand as is possible, the

needle is passed through it close to the abdomen, and a piece of whipcord is bound round the enclosed integument crosswise and fastened.

This produces inflammation, stops the circulation, and causes tumefaction; and the result is sloughing, and as a matter of course, the superabundant loose skin being removed, in a few days all appearance of hernia is gone, and a cure is effected. Instructions should be given to the person in charge of the animal to take care to see that the ligature is kept tight, and to apply another should the first appear to have lost its hold, which, in some instances, will occur. I have adopted this plan for many years with the most perfect success and I have never known a failure: It may be urged that the operation is a rude one, but, as all our attempts at cure are united with speed and economy, it may be excused on this account. I may add that I have tried the more surgical and scientific modes, with but indifferent success. This, as I have said, never has failed. Unfortunately veterinary surgeons are expected sometimes to perform wonders, or, if they fail to do such things, they are classed as know-nothings. Doubtless many amongst us can call to mind remarks made in reference to the sister profession, how much they do, and how far advanced they are in science, and so forth.

This is true, and it is easily explained. When a human practitioner is called to act, he is cautious in any remarks he may make, and invariably says, "while there is life there is hope," and that we "must trust in Providence," and so forth. This kind of thing will not suit our clients, as the case is not one of humanity, but of *pounds, shillings, and pence.*

A human surgeon is sometimes able to save life minus a limb, or, if the limb be saved, it may be unable to perform its function, still the patient, as well as his friends, are satisfied, and heap laurels upon the medical attendant for his attention and skill, regardless of the scores of pounds paid for that attention and skill. How is it with us? Almost the first question asked is, Will the patient live, and can you save it? A prompt and decisive reply must be made, or the practitioner is supposed not to understand the case. Then a question follows, What will your charge be? And, lastly, inquiries are made as to the time required for treatment and cure, as well as probable results. All these questions and many more are thrust upon the veterinary surgeon at the onset. Should he make a mistake in opinions expressed, how, may it be asked, is he treated afterwards? It

has often occurred to me that a veterinary surgeon should, instead of attending two or three sessions at college, attend as many more, considering that many young men go there with a small amount of horse or medical knowledge. When we take into consideration the vastness of the subjects they have to become acquainted with in so short a time, we need not wonder that herculean tasks are now and then performed.

ARMY VETERINARY DEPARTMENT AND PRIVATE PRACTITIONERS.

By the Same.

Now that a new warrant has been issued which is a great advantage to those who are about to enter the army as veterinary surgeons, giving them, as I understand, something like £250 a year, it is to be hoped that private practitioners will have justice done them.

I have done duty, occasionally, in the absence of veterinary surgeons in the Army Veterinary Department since the year 1854, if my memory serves me, and I can with truth assert that my accounts have *never been paid in full!* Can you, or any of your readers, explain this? Some months ago I furnished an account, and, will it be believed, that some of my figures were erased with that ominous red ink, and half the amount substituted. Such is the fact, and the account remains unpaid. The reason I am unable to divine. Since that I claimed a certain sum for medicine and attendance, which was given in detail, and about a fourth of the sum claimed was deducted, and of course not paid.

Not only is my personal experience thus exemplified, but I am credibly informed that this system appears to be universal, and wherefore? I may with truth assert that I have experienced much pecuniary loss in the service when doing duty for veterinary surgeons on leave, but I cannot conceive that I should be subject to curtailments when no veterinary surgeon is attached. I have determined for the future, should I be called upon to attend troop horses, to furnish no detailed account for services rendered, simply from the fact that, when I furnished a true and faithful return of visits and medicines supplied, my figures were erased and others substituted. When we consider that the commanding officer placed his name in approval of the claim, which is required in all such documents, it casts a slur upon the veterinary surgeon as well as upon the officer commanding.

In commercial transactions it is always understood if a bill is examined and approved it is paid; and in the name of common sense why is it otherwise in the veterinary department of the army? This practice is condemned alike by both civilians and soldiers. If the principal veterinary surgeon is desirous of having the best skilled practitioner in attendance upon army horses, which the army regulations require, I think he should endeavour to remunerate the services of such men to the utmost of his power. I do not believe any man called upon to render aid would be guilty of extortion. I can only declare, for my own part, that I have always charged a smaller sum that I charge my ordinary clients.

It is not my province to offer any suggestions, but I must for myself state thus publicly that if I furnish an account, and that account is passed, I shall expect the sum so passed to be paid in full. My clients pay my demands in full, and I want to know why army accounts should be an exception. It is high time that the system so long in practice should be changed.

I am at all times glad to render service to the army, at the same time I take it the labourer is worthy of his hire. I do not covet army practice, because it is not a paying practice, but accounts when signed and countersigned, as they invariably are, should be discharged without any curtailment.

I trust these remarks will fall under the notice of those whom it may concern.

LARYNGITIS LEADING ON TO SPASMODIC DYSPNŒA AND SUDDEN DEATH.

By J. P. Heath, M.R.C.V.S., Exeter.

I send you by rail the larynx of a horse which has been under my treatment for about two months. The case originally was one of severe "Influenza," and when getting better I had the horse walked out for exercise daily. On three or four different occasions the groom had great difficulty in getting the horse home(only a few yards), owing to what I considered to be spasm of the larynx. The attack was accompanied with roaring which could be heard fifty yards off, while the breathing was most difficult and carried on through his wide open mouth. The animal, apparently gasping for breath, frothed at the mouth, pawed violently, lay down

and broke out into violent perspirations. I applied blisters to the throat at intervals, besides mustard poultices.

Last week, as the horse was looking well and gaining flesh and none of the spasms had appeared for ten or twelve days, the groom took him about 100 yards to the farrier's to have his feet put in order for work. On the way he suddenly dropped in the road and died in a few minutes from suffocation.

The *post-mortem* examination showed great thickening of the aryteniod cartilages on each side of the larynx, so much so that it appeared impossible for the muscles which dilate the entrance to the larynx in a normal state to do so in this case. I have not removed the mucous membrane before sending the specimen to you, but I think indications of ulceration in both the arytenoid cartilages can be detected.

The animal was a cart horse, the property of Messrs. Norman and Pring, of the City Brewery, Exeter, and I should be glad to know if you think that the morbid condition of the larynx could have been produced in from two to three months, the time that the horse has been in their possession. I have given it as my opinion that this attack of influenza may have produced it all, as the horse worked well and drew heavy loads after they bought him.

[Beyond the condition of the larynx described by Mr. Heath very little was to be observed. The arytenoid muscle on the left side was slightly atrophied, a not unfrequent result of laryngitis. Here and there the mucous membrane had a flocculent appearance, but no ulceration was present nor any lymph deposits to which the impeded respiration could be referred. All the lesions were clearly the result of the attack of laryngitis; and consequently, in so far as they were concerned, there was no evidence of the horse being diseased prior to the attack.—EDS.]

CASES OF BLOOD-POISONING.

By the Same.

DURING last summer I was sent for to see a heifer, the property of Mr. Pople, which had been attacked in rather a peculiar manner. I found her suffering from a copious and very offensive diarrhœa, and I recognised also a similar fœtid odour exhaling from the entire skin of the body. The hair came off very easily. The extremities were cold, the pulse quick and weak, and all desire for food gone. I

examined the herbage and water supply of the field and found that the drainage from a neighbouring cemetery mingled with the only water the cattle had to drink in dry weather. Hence I concluded that the case was one of blood poisoning.

I treated her with chlorate of potash, spirit, and cinchona bark every morning, and carbolic acid in small doses in her gruel, and hyposulphite of soda and spirit, or ale every evening. During the continuance of the diarrhœa I gave in addition two or three ounces of powdered box leaves daily. She recovered slowly, and ultimately the whole of the hair of the body came off; the smell from the skin continued for nearly a month. At times sloughs of mucous membrane came away with the fæces similar to cases of typhoid fever. I need scarcely add that I did not allow any of the other cattle to drink from the same place, and that the disease was thus prevented from spreading.

Case 2.—The next was a similar case. It occurred in a cow and was produced by drinking water in a dry summer which was stagnant and contaminated by organic matter. I detected the cause at once by the smell of the skin and the diarrhœa. The animal being the property of a dairyman her illness was noticed at the outset, and chiefly by the loss of milk. She recovered in about a week. In this case, as in the younger animal, depilation ultimately took place.

Since the occurence of these cases I have treated five yearlings, the property of Sir J. Kennaway, Bart., for a similar attack, one of which died. The animals were all attacked in hot summer weather when clean water was scarce. Such cases are, I firmly believe, of more frequent occurrence than is commonly supposed.

REMARKABLE CASE OF *ECHINOCOCCUS VETERINORUM* IN THE LIVER OF A COW.

By James East, M.R.C.V.S., Aylesbury.

Thinking the following case may prove somewhat interesting to the readers of the *Veterinarian,* I will briefly describe the facts in connection with it.

I was called about ten days ago to see a four-year old cow, the property of E. C. Clarke, Esq., of Manor Farm, Haddenham, which he had purchased about a fortnight previously, the dealer from whom he bought the cow describing her as being pregnant and likely to calve in a month from the date of purchase. After the animal had been brought

home about a week she was noticed to stand about in the meadow, and to look very dull and dispirited. In consequence of this I was requested to go and see her. On my arrival I found the cow in a loose box, looking very dull, with a staring coat, loss of appetite, excessive diarrhœa, pulse slow and very weak, staggering gait, and continually moving her head about as if the brain were implicated, the visible mucous membrane being slightly congested; on manipulation over the region of the liver I could detect something very hard, which extended from the inferior portion of the abdomen to the spine. I informed the owner that the animal, in my opinion, was suffering from diseased liver, and that the case would in all probability prove a fatal one, but the owner suggested that the animal should be treated a few days, in order that he might communicate with the dealer he purchased her of. I accordingly ordered an application of mustard over the animal's liver, and gave her Sprt. Æther Nit. and Tinct. Opii, followed by doses of Creta Preparata, Gentian, and Carui Fructus, with gruel and occasional doses of brandy, but the animal each day grew gradually weaker, and her owner consented to have her destroyed. On making a *post-mortem* examination I found the liver to be enormously enlarged, and weighing when first taken from the body 130 lbs., its whole surface being completely studded with the encysted hydatids (*Echinococcus veterinorum*), which could be easily detected by the aid of the microscope; the mucous lining membrane of the bowels was slightly congested; there were also a few scattered hydatids situated under the pleural covering of the lungs, but they were very small; the remaining organs of the body were healthy. I may add the animal was not pregnant as she was supposed to have been.

Comments by Mr. J. H. Steel *on the Specimen of Liver of Cow forwarded by* Mr. J. East.

The specimen obtained from the animal mentioned in Mr. East's description of the case was kindly forwarded by him to me. I have recorded the following dimensions of the liver and its appendages:—*Liver*, width, three feet; depth, two feet three inches; thickness, varying up to as much as ten inches. *Gall-bladder*, ten inches in length, seven inches wide, and walls varying in thickness up to about half an inch. The immensely increased size of the organ may be inferred from the above notes and from the weight mentioned by Mr. East, which (making allowance for a small loss of fluid) was verified by me. But

little liver structure remained, the parasitic organisms being thickly spread throughout the whole mass of the organ; it therefore resembled rather an agglomeration of cysts than the liver, and its colour, for the greater part of of its extent, was white. The Echinococci exhibited their varying stages of development in a highly interesting manner, some of the cysts being simple, and the others showing the multilocular character. They varied, therefore, very considerably in size and complexity, and some of the hydatids, when removed from their cysts, showed a separation of small portions of the primary sac, the process of gemmation, or budding, evidently had been an important agency in the production of the enormous congregation of the parasites in this organ. The majority of the cysts contained the ordinary watery material, with the floating heads of Tæniæ, but in some few of the smaller ones there was a dark coloured matter of an extremely fœtid odour, due to the death and decomposition of the parasites. As far as my experience goes this is *one* of the most extreme cases of an invasion of an internal organ by hydatids ever recorded. The museum of the Royal Veterinary College contains a similar specimen of the liver of a sheep which was some time ago forwarded by Mr. Lepper from the same neighbourhood, the Vale of Aylesbury. The hydatids in it are equally numerous, but not so large, and the liver structure is more plentiful than in the case above recorded. An allied case from the pig was also sent several years since to the College.

Pathological Contributions.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of May, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . .	Foot-and-Mouth	1	...	...	...	1	Slaughtered under the instructions of the Privy Council.	45	2	...	...	47	Slaughtered under the instructions of the Privy Council.
Antwerp . .	„ . .	„	...	7	...	...	7	Ditto	...	83	...	...	83	Ditto
Bremen . . .	„ . .	„	...	2	...	...	2	Ditto	...	3392	...	...	3392	Ditto
„ . . .	„ . .	Sheep-scab . .	...	18	...	...	18	Ditto	...	2698	...	...	2698	Ditto
Hamburg . .	„ . .	Foot-and-Mouth	...	3	...	...	3	Ditto	...	608	...	...	608	Ditto
Rotterdam . .	„ . .	„	...	2	...	...	2	Ditto	184	1304	...	96	1584	Ditto
„ . . .	„ . .	Sheep-Scab . .	...	12	...	...	12	Ditto						
Total Diseased Animals .		Foot-and-mouth	1	14	...	...	15	Total Healthy Animals .	229	8087	...	96	8412	
		Sheep-scab . .	...	30	...	...	30							
		Total . .	1	44	...	...	45							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

New York . .	Liverpool . .	Sheep-scab . .	...	6	...	...	6	Slaughtered under the instructions of the Privy Council.	Note.—The whole cargo was affected. These sheep were surplus ship's stores, some having been shipped at Calcutta and some at St. Helena, and were brought to Liverpool viâ New York.

Veterinary Department, Privy Council Office,
June 10th, 1878.

CATTLE PLAGUE.

This disease has appeared in the neighbourhood of Smyrna, where it has been introduced from European Turkey. Measures have been adopted to arrest its progress. Regulations have been issued at the ports for the disinfection of hides and other substances calculated to introduce the disease.

Cattle plague is reported to have disappeared from the kingdom of Austria, except in the districts of Cattaro and Dalmatia.

FOOT-AND-MOUTH DISEASE.

Foot-and-mouth disease was reported to have existed during May in the following counties:

Anglesey, Cardigan, Denbigh, Derby, Durham, Herts, Kent, Lancaster, Norfolk, Northampton, Northumberland, Stafford, Wilts, and York (North and West Riding). Foot-and-mouth disease has appeared among the English cattle landed from quarantine at Poplar from the Paris Exhibition.

PLEURO-PNEUMONIA.

The existence of pleuro-pneumonia was reported from the following counties in May:—

Bedford, Chester, Cumberland, Derby, Dorset, Durham, Essex, Huntingdon, Kent, Lancaster, Leicester, Lincoln (Lindsey), Middlesex, Norfolk, Northampton, Northumberland, Notts, Rutland, Salop, Somerset, Stafford, Suffolk, Surrey, Sussex, Worcester, York (East Riding, North Riding, and West Riding), Stoke of Peterborough, the Metropolis, Anglesey, Denbigh, Merioneth, Aberdeen, Banff, Berwick, Edinburgh, Fife, Forfar, Kincardine, Kinross, Lanark, Linlithyow, Perth, Wigtown.

SERIOUS OUTBREAKS OF RABIES AMONG HOUNDS.

The daily papers report that a serious disaster has befallen the splendid pack of staghounds used in hunting the Exmoor country, under the mastership of Mr. Mordaunt Fenwick Bisset, in the loss of fourteen of the animals from rabies. On the last day of the past season the foremost hound of the pack was bitten, as it was running through a field, by a strange dog that came out of a hedge. No notice was taken of it, and before (?) the

disease developed in the hound he had bitten thirteen others, all of which have had to be destroyed. The animals are not only very valuable, but very difficult to be got, and it is feared there may be no stag-hunting next season in the red deer country.

ANOTHER outbreak has occurred among the Holker harriers. Mr. Telford, the huntsman to the Marquis of Hartington, found it necessary some weeks ago to destroy eight of the hounds owing to indications of their being affected with rabies. Since then the disease has shown itself to such an extent that twenty-five more of the pack have had to be shot. Only five harriers are now left in the pack, which has existed at the North Lancashire seat of the Duke of Devonshire from time immemorial.

The Sanitary Record says that Dr. Prater, of Edwardes Square, Kensington, offers a prize of £100 for the best work on Rabies and Hydrophobia, the adjudicators to be professors of physiology and medicine in one of the Scotch universities; "provided that the English law on the subject is ameliorated, and also that a few more experiments, without injury to animals, are made on the subject."

Facts and Observations.

DOG LICENSES.—A return just issued shows that last year 1,238,867 licences for dogs were granted in England, and 153,309 in Scotland. The numbers granted in the preceding year were 1,209,490, and 152,686. During the year 1876 the number of deaths from hydrophobia was 53, the number in 1875 being 47; in 1874, 61; in 1873, 28; in 1872, 39; in 1871, 56; in 1870, 32; in 1869, 18, in 1868, 7; in 1867, 10; and in 1866, 36.—*Sanitary Record.*

SHOCKING CRUELTY TO A BULLOCK.—Sentence of six weeks' hard labour has been passed on William Bowler Greenwood and William Venden, dealers, and Lewis Wilkin, a drover, by the magistrates at Mistley, near Manningtree, Suffolk, for cruelty to a bullock. The prisoners cut the animal through the nostrils in two places, nearly severed its tail from its body, and worried it with a dog, which bit off part of one of the bullock's ears. Wilkin also beat the bullock so much that, according to one of the witnesses, "his arm was ready to drop off." The only excuse made was

that the poor beast, after travelling ten miles, was unable to go further, and the defendants were afraid they would miss a train. It was also alleged for the defence that the cuts were made to bleed and thus benefit the bullock, but it was proved that this was not the case. The animal lost several quarts of blood, and after twelve hours' agony had to be killed.

Conveyance of Dead Meat.—A new carriage, designed by Colonel W. D. Mann, of the United States army, and specially adapted for the conveyance of dead meat, fish, fruit, or other perishable goods, has been constructed by the Ashbury Railway Carriage and Iron Company, Openshaw. The vehicle, which externally resembles an ordinary carriage, is built with double walls, and the intervening space is filled with layers of non-conducting substances, namely, sawdust and paper. The whole of the interior is lined with galvanised zinc, which also composes the bars and hooks upon which the meat, &c., would be hung. Along the roof runs a semicircular chamber, capable of holding 12 cwt. or 14 cwt. of ice, and into this chamber the air is first introduced, after the freight has been deposited in the van and the door hermetically sealed. After passing through the ice the air is forced through a receptacle filled with charcoal, which dries it, and then circulates among the contents of the waggon. It is afterwards discharged through an automatic discharge pipe. This is the first waggon of the kind built for any English railway, and it is intended for service between Scotland and London. With this contrivance meat can be kept perfectly fresh for five or six days, and in case of the market being overstocked the meat may be kept in the van, which is thus converted into a temporary store-house.

American Cattle.—The Treasury Department at Washington has published a report which has been recently received from Mr. Wilson, United States Consul at Hamburgh, and in which he states that an attempt is being made to establish an export trade in lean cattle to be sent from the United States to graze and be fattened in Schleswig-Holstein, "famous for its rich pastures, which are not surpassed in any part of the world."

The object is to export the cattle again, when fattened, to England and other European states. By way of experiment, 320 lean cattle from Chicago were landed at Tonning in April, costing much less than the price at which such animals can be procured from any part of Europe.

THE VETERINARIAN, JULY 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE ROYAL COLLEGE OF VETERINARY SURGEONS.

IN the Report of the Proceedings of the Royal College of Veterinary Surgeons in June, it will appear that an important step was taken. Every member of the profession who attends an annual meeting, and all members of Council, who as a matter of duty attend meetings at the College, more or less, are fully alive to the fact that the offices in Red Lion Square are, in plain terms, unfit for the intended purpose; in fact, were it not for a conspicuous brass-plate on the door, announcing the title of the building, it could not occur to the passer-by that an important scientific body had there found a habitation.

For some years past efforts have been made to improve the existing arrangements in regard to the office of the College, but those efforts have not been seconded by the profession, and hitherto have not been productive of good results. The last movement promises better things.

It is proposed to ask the Government for a grant, not of money, but of premises. Such a grant, in fact, as the Government has made to the other scientific bodies. The memorial, which Mr. Fleming has drawn up, puts the grounds of the application in a perfectly simple and intellible form. It cannot but be conceded that the claims of the veterinary profession to public recognition in this country are as great as they are in any part of the world; indeed, having regard to the enormous individual and collective value of our stock, it would not be unreasonable to assert that they are even greater; there is nothing, therefore, strained or presumptuous in the request for so much acknowledgment from the State as would be included in the grant of proper offices for the reception of the representatives of the profession.

A considerable library, and at least the nucleus of a good museum, are already in the possession of the College; both

have recently been enriched by a valuable donation of books, drawings, and specimens from Mr. Field, and were a suitable building provided, there is no doubt that many members, who object to bury their treasures in Red Lion Square, would be disposed to place them where they would be well displayed, and serve some useful purpose.

We may venture to prefer our request, not merely on economic grounds, although as a corporation which is not the richest in the world, indeed, is quite otherwise than rich, pecuniary considerations may have some weight, but far more urgently on the plea that such a recognition would be an honour not undeserved, and that its effect on the advancement of the profession would be great. We might go so far as to assume that in such an event the gratitude of the veterinary profession would not take the common form of a lively anticipation of further benefits, but rather that every member would show his appreciation of the honour conferred by the State, in a honest endeavour to do the State good service.

Extracts from British and Foreign Journals

REPORT ON THE PATHOLOGICAL ANATOMY OF PLEURO-PNEUMONIA.

By Gerald F. Yeo,
Professor of Physiology in King's College, London.

Introduction.

The difficulties which present themselves in attempting to study the pathological anatomy of the diseases of cattle are increased in the case of pleuro-pneumonia by the legal restrictions which compel the slaughter of beasts affected with it. In most instances the animals are slaughtered suddenly, by order of the authorities, allowing no time for notice to be sent so as to enable one to reach the scene of action. It is therefore only by means of the combined kindness of a number of disinterested persons that a *post-mortem* examination can ever be witnessed, and then only at the expense of much time and trouble spent in reaching some remote locality. Moreover, the inspection of the autopsy but poorly repays the personal incon-

venience which must be gone through in order to attend it, for the slaughter and evisceration of the animal must always be conducted by some practised operator, whose dexterity depends upon his rigidly adhering to a certain methodical system, which is not framed with a view to pathological investigation. The necessary operations are performed with such skill and rapidity that no time is allowed for the pathologist to contemplate the relative position of the morbid parts, or to reflect on the possible pathogenic relation which one may bear to another.

It is a well recognised fact that in order to make a description of the pathological anatomy of any disease at all adequate, or of scientific value, all the viscera should be examined in every case, so that the most trivial abnormality may be noted. In the lung disease of cattle this may be regarded as impossible.

Besides the difficulty of attending the slaughter of the beast, the enormous bulk of the material—the diseased lungs alone often weighing 30 lbs.—in the majority of cases renders the thorough investigation of all the viscera quite out of the question. Fortunately, in pleuro-pneumonia this does not seem at all necessary, because the abdominal organs do not present any changes which can be looked upon as either constant or characteristic of the affection.

The nervous centres have never been examined, because it is necessary, the instant the animal is knocked down, to destroy the spinal cord and the brain, so as to prevent the energetic reflex movements of the limbs which would otherwise accompany the skinning, and prove dangerous to the operators.

There are, then, in studying the diseases of the lower animals, many difficulties which balance the one advantage, of which we often hear, namely, that of being able to kill the beast at any time, and thus find out the steps in the morbid changes which correspond to the various stages of the disease. Practically, in the case with which I have to deal, this advantage is but little felt, for there is really no control over the time of slaughter, and there seem a clinical difficulty in ascertaining how long the disease has lasted, so that the exact stage it has reached cannot be known until the animal is killed.

These difficulties doubtless explain the great paucity of scientific literature on this subject, and the complete want of any adequate scientific explanation of the progress of the disease. The following references may suffice to give some idea of the present standpoint of our knowledge of the subject.

The first accurate description of the morbid anatomy of pleuro-pneumonia that I have been able to find, is given by

F. Weber,* and, as far as the description of the appearances of the diseased lungs is concerned, this paper has not been surpassed by any since published, that I know of. He calls the disease *interlobular pneumonia*, and attempts to explain its development as a form of chronic inflammation of the tissues between the lobules. Though he recognised that there were different kinds of consolidation, he appears only to have submitted one of these varieties to minute investigation, otherwise his clear reasoning would not have led him to the conclusions which he announces in his paper.

He says that examination of the diseased lung gives two negative results:

1. There is no trace of croupous exudation in either the large or small bronchi; the mucous membrane in the larger ones is perfectly healthy; in the smaller tubes a mere trace of catarrhal injection can be detected.

2. In the lung tissue itself the air cells are filled with fluid, as in œdema, and not with solid exudation.

From these results he concludes that the tissue of the lnng is in a state of œdema, not hepatisation.

With reference to the starting-point of the disease, he says, "I now pass to the beginning stages, which give the clearest proof that the interlobular connective tissue and the pleura are the real seat of the disease." The other parts, he thinks, become secondarily affected, the exudation causing a kind of strangulation of the lobules, which gives rise to hyperæmia, pulmonary apoplexy, serous infiltration, and (very rarely) hepatisation.

The connective tissue of the lung, then, he considers to be the part affected by the disease, which generally begins under the pleura, but also occasionally in the deeper interlobular tissue.

He distinguishes two forms of this interlobular pneumonia. One widespread and diffuse, extending over an entire lung. The other, which attacks a small, sharply bounded part of the lung, like lobular pneumonia. These occur with equal frequency, and he expressly states that their difference merely depends on extent and anatómical arrangement, their mode of origin being identical.

Klebs† describes one case in which he found good examples of vascular plugging. He thinks the disease resembles in most respects ordinary pneumonia, but can be distinguished by the coagulation in the vessels.

* 'Virchow's Archiv,' Bd. vi, p. 89.
† Ibid., Bd. xxxviii, p. 326.

Röll* considers that this disease corresponds with the interstitial pneumonia of other animals. The first steps, he thinks occur in the connective tissue between the lobules, most commonly in the deeper parts of the lung. This tissue becomes congested, and a serous exudation takes place into it, which greatly swells the interlobular spaces. The congested pulmonary parenchyma is thus pressed upon, and ultimately becomes quite airless. The serous fluid more rarely fills the air-cells themselves, and still more unusual is the occurrence in them of the firm exudation of ordinary inflammation. He describes the various secondary lesions which may arise in the course of the disease, and amongst them he mentions bronchial and pleural inflammation.

Bruckmüller† considers pleuro-pneumonia of cattle to correspond exactly with ordinary pneumonia of other animals, the peculiar construction of the lung sufficiently accounting for the peculiarities in the pathological anatomy of the pneumonia of bovine animals.

"There is only one form," he says, "of inflammation of the lung in cows, and this is always associated with very striking changes in the interstitial tissue." He describes the disease under the title "croupous interstitial inflamation of the lung," and he says, "If we compare the pathological products which arise in the lungs of cows affected with pleuro-pneumonia (*Lengenseuche*) with the products of inflammation of the lungs in other animals, we can find no real difference." He denies its specific nature and its contagiousness, but says it is a good example of an infectious complaint.

The scientific pathology of this disease has not been studied in England with great care or success. The morbid appearances are very easily recognised, and no energy was required to master the anatomical details, since any one can recognise the disease *post-mortem*. Therefore the English school has neglected this department of study, having preferred to go into the wider field of theoretical speculation in order to determine the cause of the disease.

Professor Brown,‡ in an admirable brochure on the subject, gives a very clear sketch of the disease, and well describes the most striking morbid appearances. As to the exact essence of the disease, he says:

"Pleuro-pneumonia is essentially determination of blood to the lungs, and exudation of liquor sanguinis, that is to say, blood deprived of its red particles, into the connective tissue

* 'Lehrbuch d. Pathologie u. Therapie d. Hausthiere.' Wien, 1860.
† 'Lehrbuch d. Path. Zootomie.' Wien, 1862.
‡ 'Obss. on the Lung Disease of Cattle known as Pleuro-pneumonia.'

which is everywhere distributed throughout the lung structure, existing abundantly between the lobules and on the surface of the lungs under the pleural membrane. Exudation occurs also on the surface of the pleura, but the chief deposit takes place under it, and causes its elevation from the lung tissue just as the exudation between the lobules causes them to separate from each other."

And again he says:

"Inspection of those organs of the animal body which are principally implicated in the disease (the lungs), however minute and complete it may be, only put us in possession of a knowledge of effects. It is evident enough that the lungs have received an excess of blood, and that a large quantity of the circulating fluid has been exuded into the tissue of these organs; but the really important question is, What circumstances conduced to these results? And the only answer which the pathologist can offer is contained in a somewhat vague reference to 'blood poisoning.' As in other contagious diseases the blood of the animal affected with pleuro-pneumonia becomes charged with some poisonous material, which is excreted by the vessels of the lungs: for example, in small-pox, the virus is excreted by the skin, and the poison of cattle plague by the mucous membrane. In each case it is impossible to define the determining causes. We can no more understand why some of the constituents of the diseased blood are poured out in large quantity in the fibrous tissues in the lungs in pleuro-pneumonia than we can comprehend the ultimate cause of the distinctive eruptions in the various exanthematous diseases."

Mr. Fleming* says, "Pleuro-pneumonia is a specific and contagious fever peculiar to bovine animals. In its essence it is a malignant fever allied to the general eruptive diseases."

Professor Walley† gives an elaborate account of the *post-mortem* changes of zygomatic pleuro-pneumonia. He divides the progress of the disease into three artificial and rather fanciful chronological stages. The general characters of the first being:

"Increase in weight, bulk, and friability; diminution in resilient power, and consequently increased resistance to inflation and decrease in crepitation on pressure; with deepening of colour, and the presence, occasionally, of ecchymoses or hyperæmic patches in the bronchial mucous membrane, and vascular stellate spots in the parenchyma."

* 'A Manual of Vet. Sanitary Science and Police.' London, 1875.

† 'Vet. Journ.,' May, 1876.

He says:

"The general characters of the second stage are:—A mottled appearance on section, increase of bulk, density, specific gravity, and friability; absolute loss of textural integrity, breaking up of the capillary vessels, and as a consequence, parenchymal extravasation: obliteration of large vessels and small bronchia, with destruction of the thoracic lymphatic glands."

He thus sums up the characters of his third stage:

"Absolute loss of integrity (death), with segregation of the injured lung; hyperplasy of contiguous interlobular tissue; and increased density of the surrounding parenchyma. If the destructive process is arrested, the conditions are—absorption of the red cells, consolidation of the parenchyma, hyperplasy of the interlobular connective tissue, restoration of the circulation, *grey or yellow hepatization*. In either case the changes in the bronchia and trachea are—ulceration of the mucous membrane, and consolidation of the submucous and extra-tubular exudate."

As an outline of its general pathology, he says:

"We are justified in concluding that Zy. p. p. is a distinct and specific infection, and that, although the structures which have been injured by the localisation of its lesions, secondarily (unless dead) undergo inflammatory changes; primarily, the disease is a purely effusive one, *i. e.* in the initial shape, effusion—simply and purely—is the characteristic lesion; in the second and third stage, passive are accompanied, and finally succeeded, by active processes; and, in the subsequent changes, inflammatory processes alone go on."

The French definition of the disease is much the same. The most recent authority says:* By this name "peripneumonie contagieuse") is designated a virulent and contagious general affection, confined to bovine beasts; it is of epizootic character, and is accompanied in ordinary cases by local manifestations in the lungs and pleura, and by a fibrino-serous exudation into the interlobular connective tissue and the pleural cavity; an exudation which has been erroneously regarded as inflammatory.

Normal Anatomy.

In some points the structural arrangement in the lung of the ox is sufficiently peculiar to demand a short notice, the more so since the peculiarities have, I believe, a very direct bearing on the mode of commencement and progress as well as the pathological characteristics of the disease.

* 'Dictionnaire de Méd. Vétérinaire,' t. iii, p. 74. Paris, 1877.

The regional anatomy appears to be interesting only from a clinical point of view, showing, as it does, how difficult, if not impossible, it must be to recognise pneumonic consolidation when the disease is localised to the anterior lobes, which are completely walled off from physicial examination by the dense mass of solid parts forming the shoulder of the beast.

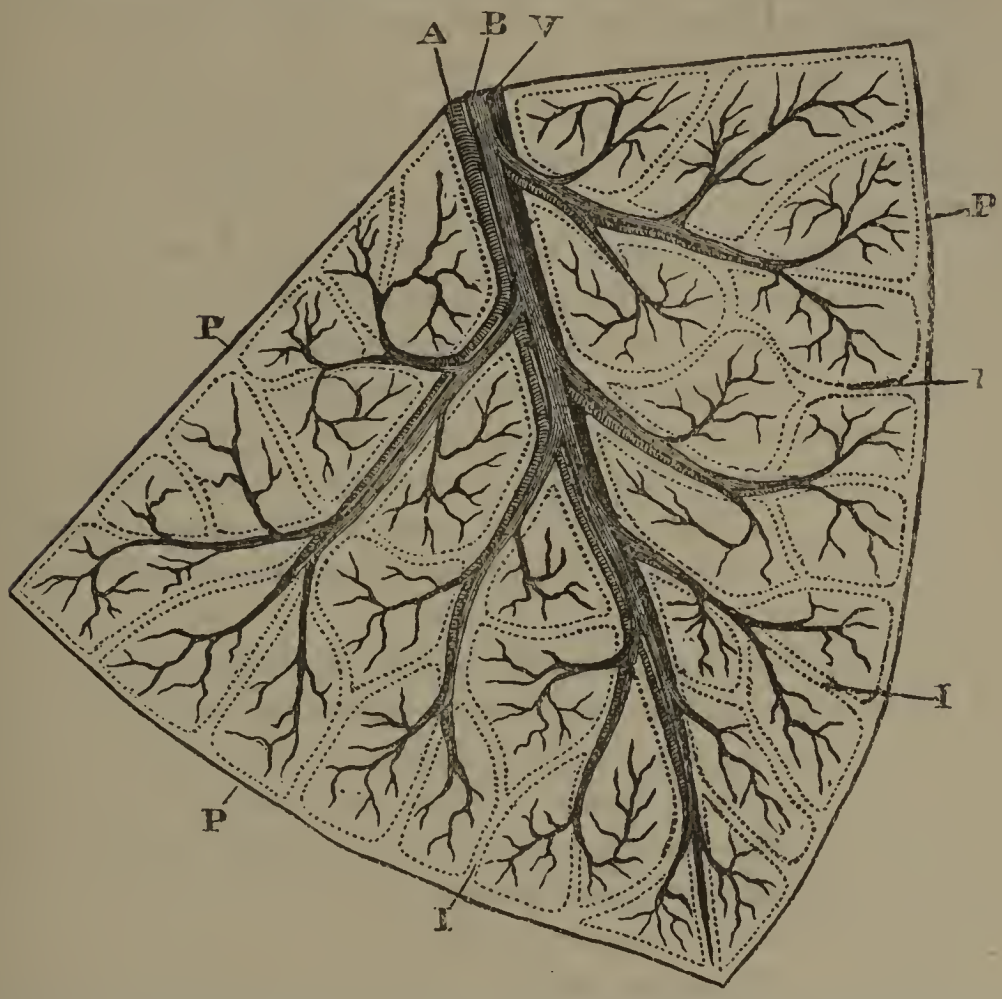
The number of lobes and their complete separation one from the other by means of deep fissures may tend to keep the disease isolated, but otherwise the descriptive anatomy teaches us little. In the larger air-passages the mode of subdivision is irregular, being seldom fork-like, as in the human lung. The trachea itself does not bifurcate until it has given off a large separate branch to the right anterior lobe. The lobar bronchi give off small lateral branches, as they run down sometimes beneath the pleura of the long slender lobes, and do not divide dichotomously. The mode of branching, however, is found to differ materially in different lobes, and appears to depend on their size and shape, those of the large posterior lobe dividing more like the air-passages of the human lung.

The blood-vessels follow the course and mode of branching of the air-tubes; the artery and the vein lying on either side of their corresponding bronchus. In the healthy lung the vessels and bronchi are surrounded by a quantity of very delicate connective tissue, which forms around them a loose sheath common to the three, so as to separate them from the lung parenchyma. Any, or all, of the vessels may be pulled out of this yielding case of soft cobweb-like tissue; and the delicate structures may be torn from their proper coats, with which they are thus seen to be directly continuous. The bronchus, artery, and vein contained in this sheath may be conveniently referred to under the name *broncho-vascular system*, while the region of lung-tissue supplied by any such system may be called *broncho-vascular territory* (Fig. 1).

If a thin injection-mass be thrown down, with gentle and steady pressure, into the interstices of this peribronchial tissue, it gradually runs along the outer surface of the bronchus and vessels, and permeates into all parts of the connective tissue sheath. Thus may be demonstrated the existence of a close network made up of an immense number of a delicate, irregularly sinuous, or lacunar lymph-channels, which completely encompass the artery and vein, and form around them a sheath of lymphatic anastomoses.

In the very small bronchial tubes which belong to the single lobules the mode of branching changes and becomes dichotomous, and the branches lie at right angles to each other. Within the lobules, the tubes and vessels have no

FIG. 1.—*Showing the Distribution of a Broncho-vascular System and the corresponding Territory of part of a Lobe.*



A. Artery. B. Bronchus. V. Vein. P. Pleura. I. Interlobular spaces. The dotted lines indicate the course of the lymphatics. (Semi-diagraphic Reduced one-half).

longer the same sheath of connective tissues, and I have failed to satisfy myself of the existence of any lymphatic vessels around the bronchus in this situation. If such exist, they must play a very insignificant part in draining the tissue, compared with that taken by the numerous channels in the sheath of the larger broncho-vascular systems.

With regard to the construction of the parenchyma of the lung, there are also some peculiarities which deserve special note, as they distinguish the lung of the ox from that of most other animals. In the bovine tribe a state of affairs persists throughout adult life, which is found only in the early stages of the development of the lung of man. The lobules, or ultimate component parts, are distinct from each other, and may be regarded as independent lung units, each having its own proper air-tube and blood-vessels, and being connected to its neighbours only by some very delicate connective tissue. This connection can be stretched, by a little gentle traction, so as to make the partition between the

lobules an eighth of an inch in width. A little more forcible traction, aided by occasional touches of a scalpel, tears through this delicate tissue, so that, with a little care, the lobules may be completely separated from each other, without their tissue suffering the least injury. They are thus left hanging from the large bronchus, by means of their own proper broncho-vascular systems, just as raisins hang from the parent stalk. If they be now partially inflated, each lobule is seen to be a soft, irregularly shaped body, about the size of a filbert nut. On the pleural surface the outlines of the lobules can be seen to be polygonal areas with definite boundaries. The spaces between the lobules are occasionally made more prominent by means of little chains of air blebs, which lie in them. This seems a common pathological condition in cattle, being a form of true interlobular emphysema, which can also be easily produced after death by means of forcible inflation.

When the delicate connective tissue, which forms at the same time the partition and connection between the lobules, is broken through, each lobule may be seen to be enveloped in a case of this loose tissue. This can be traced to the point of entrance of the vessels, where it is found to be continuous with the tissue of the loose sheath already described as surrounding the broncho-vascular system.

Careful investigation of the fine interlobular connective tissue shows it to be the seat of a very rich plexus of lymph-channels. Here and there vessels with an even outline and wall are seen, but it is more common to find, lying throughout the tissue, wide, sacculated, and irregular passages, freely intercommunicating one with the other. This plexus of lymph-vessels lies midway between two adjacent lobules, and evidently carries some of the lymph overflow from each of them, their lymph-channels being thus intimately related.

By blowing air into an interlobular space, a number of the neighbouring spaces may be inflated, and thus artificial emphysema produced. The relations of these parts can, however, be much better seen by means of injection. A thin coloured solution may readily be made to run through the lymph-channels, and will be found to spread from one interlobular space to those immediately adjacent; and thence it will pass along the lymphatic channels of the corresponding broncho-vascular system already mentioned. Thus, from a single point of insertion under the pleura, not only can more than one interlobular space be injected, but also the injection finds its way along the lymph track, and reaches the main routes, leading towards the root of the lung.

A rich set of lymph-channels may be seen beneath the pleura being best marked over the interlobular spaces. Though at first it appears distinct, this lymph plexus is intimately connected with those of the interlobular spaces, and may be regarded as a part of the same general system. That wonderfully rich set of lymphatics, with which one is familiar in the sub-pleural tissue of many animals, does not appear to be so well developed in the ox. In comparison, at least, with those around the bronchi and vessels, the sub-pleural lymphatics are small. It seems probable that in the case of the ox the deep channels which accompany the blood-vessels take the place of the lymphatic high roads which exist under the pleura of many animals.

The following points concerning the normal anatomy may be thus briefly recapitulated.

1. The vascular and bronchial territories are distinctly defined and independent of one another.

2. The lobules of the lung in the ox are quite distinct, and may be separated without injuring their air-cells.

3. Each lobule is enveloped in a loose case of connective tissue, which contains a rich plexus of lymphatics.

4. A sheath of delicate connective tissue also surrounds the *broncho-vascular systems*, and forms the bed of large lymph-channels.

5. The lymph from the interlobular spaces passes along the peribronchial passages.

6. As the lymph-vessels follow the course of the broncho-vascular systems, those around any given system must drain the territory of the lung tissue supplied by that system.

7. The sub-pleural lymphatics seem to take a less important share in draining the tissue than is the case in many other animals.

Morbid Anatomy.

There are few diseases in which the *post-mortem* appearances are more characteristic than in pleuro-pneumonia. So distinct are the characters of the advanced stage of the disease, that the most unscientific eye can recognise it after seeing a few cases. The group of morbid changes is very constant; and moreover, there is a general character which is so peculiar as to be easily recognised in every stage of the disease, and which has therefore been deemed specifically diagnostic of it To the butcher, pleuro-pneumonia presents a much more simple field for speculation than it does to the pathologist, who recognises a number of different morbid changes, which seem to depend on very different causes.

Morbid processes occur in the pleura, in the lung paren-

chyma, and in the bronchial tubes and blood-vessels. It appears convenient to discuss the changes in each of these parts separately, in the order named, this being also the order in which they are met with in the *post-mortem* examination.

Pleural Lesion.—The changes in the pleura show the ordinary signs of pleurisy of rather acute type, in some one or other of its many phases. There is nothing definitively characteristic in the anatomical changes in the pleural cavity to distinguish this from the other forms of pleural inflammation, from whatever cause they may arise. The only point of peculiarity which seems constant in this disease of the pleura is its tendency to remain localised, although the inflammation is intense. In acute pleuritis, the inflammation is usually diffused very evenly over the entire organ, but here are found very different degrees of pathological change in different parts of the same pleura, the inflammatory action being always more intensely marked in some one part than over the general surface of the lung. This focus of greatest intensity is usually well seen even in old cases, for at this point the pleura is found to be covered with dense fibrinous exudation, the deeper layers of which are often stained with blood. This is invariably found to cover the point where the lung lesion is most advanced in its development. As the disease spreads, the contiguous lobes become firmly cemented together by the adhesion of their pleural surfaces. Adhesions may also occur between the visceral and parietal layers of the pleura, but it is more common to find them widely separated by a quantity of fluid effusion. The amount of disease found on the parietal pleura is, commonly, strikingly slight, when compared to that of the pleura covering the lung.

Every variety of exudation may occur, and often a number of different kinds are met with in the same pleural cavity. Most commonly the surface of some one part is coated over with soft, spongy, friable, or semi-gelatinous material, while in other parts the pleura may only be thickened or opaque. Now and then dense fibrinous masses may cause firm adhesions; but the animals are seldom allowed to live long enough for that to take place.

The effusion contained in the cavity of the pleura is generally a thin yellowish, or greenish, whey-like fluid, containing flocculent masses or shreds of fibrinous material. It forms a soft coagulum soon after removal. Sometimes it is quite clear, but more commonly it is turbid or opalescent. I have not met with a case where the pleural cavity contained pus. The amount of the fluid is sometimes very great, filling the greater part of the chest, compressing the lung, and dis-

placing the neighbouring viscera. I have seen quarts escape when the breast-bone was split, and on looking into the chest it still appeared to be quite full of fluid.

When the anterior lobes are the seat of the disease and the pleura covering them is intensely affected, the neighbouring pericardium is often inflamed, its fibrous layer thickened, and the serous lining rough and studded with small points of ecchymosis.

As the name pleuro-pneumonia implies, the inflammation of the pleura is a very constant part of this disease. It occurs with great regularity, and, on account of the striking characters of the lesions it causes, it is never overlooked even by the most careless observer. Cases do occur, however, where the pleura is not affected at all. I met one such by accident when studying the normal anatomy of the bovine lung.*

In this case there was not the least sign of even thickening of the pleura, while the lung disease was well marked.

This is the only case I have met with in which there was no trace whatever of pleurisy. I am informed, however, that it it is not uncommon to find nodules of disease in the lungs of fat cattle, even where there has not been the least suspicion of disease before death, and no sign of pleural disease at all.

In three cases, where there were several points of disease in different parts of the lung, the pleura covering some of them were found to be perfectly healthy. Thus in one case there was extensive disease of the left lung and pleura, and in the right lung there were three isolated nodules, the largest about the size of a cricket-ball; and yet there was not a trace of pleural disease on that side, and nothing could be more definite than the specific characters of the diseased points of lung tissue.

It would appear, then, that pleurisy does not invariably accompany the disease of the lung tissue; but when the diseased focus is small and deep-seated, the serous membrane may escape. As a general rule, however, the *post-mortem*

* I took from the slaughterhouse the lobe of a lung as a sample of healthy tissue. It was taken from a very fine well-fattened young bullock which was not suspected, before or after slaughter, to have had anything the matter with it. The pleural surface of both lungs was perfectly healthy throughout, and retained its transparency and natural shining surface. On examining the deeper parts of this lobe, a small focus of well-marked pleuro-pneumonic consolidation was found, surrounded by a considerable area of tissue which was the seat of clear exudation. A piece cut off from the part of this lung I had removed was examined by Prof. Brown, and he considered the microscopic characters of the disease to be well marked.

examination of the disease is not made in the earliest stage, for the lung lesion may easily be overlooked, and it may remain latent for an indefinite time, and therefore its duration does not at all correspond to the clinical history of the disease, which generally dates from the pleural complication.

With regard to the lesion of the pleura, I feel convinced of the following points :—

1. It has the characters common to the ordinary forms of acute pleurisy.
2. It always varies in degree of severity in different parts of the same pleura.
3. Its point of greatest intensity corresponds to the apparent starting-point of the lung lesion.
4. It is not an invariable or essential part of the disease.
5. It usually appears to be of more acute type and more recent development than the lung lesion.
6. Its occurrence often gives the first indication of the existence of disease.

Lung Lesion.—The situation of the disease in the lung is generally obvious, on account of the pleural inflammation being more intense over that point. When the pleurisy is absent, or is too diffused to indicate the exact position of the affected part, it can still be easily be recognised as a hard, heavy, airless, and discoloured mass, standing out boldly from the neighbouring normally collapsed lung tissue, which is soft, light, and elastic.

The extent to which the organs may be affected varies greatly, the size of the diseased area being, as a general rule, in direct proportion to the length of time the disease has lasted. Sometimes the greater part of both lungs appears to be implicated, while in others there may only be a nodule the size of a man's fist. When looking at the lungs after removal, one is apt to think that a greater proportion of them is affected than is really the case; because the diseased part seem to have greater relative bulk, when compared with the healthy structure, than it has in reality; for this latter collapses into very insignificant dimensions when the thorax is opened, while the size of the diseased portion remains unaltered. The correct proportion of healthy and morbid parts can only be seen when the organs are inflated, by which means the healthy parts are distended to their normal size. At first sight I have often felt inclined to say that the whole of one lung was engaged, so enormous was the hard mass and so general the pleurisy; but inflation brought out many considerable tracts of healthy lung tissue, which would have escaped noticed had they not been thus distended with air,

In these cases, where the whole of a lung seems diseased, much of the airless part presents on section none of the distinctive characters of pleuro-pneumonia, but merely those which are due to pressure, or such-like secondary changes.

Under the present system of slaughter the disease never seems to reach the extreme stages which have been described by some authors, where the lung weighs over 100 lbs. As a general rule, the morbid processes, which are characteristic of the disease, are limited to a comparatively small area, seldom engaging more than half the lung, and most commonly only one lobe. Where many lobes are diseased, they are found to be affected in different degrees, there being usually a central focus, in which the pathological processes appear in a more advanced stage of development.

When the lung is distended with air, so as to assume its normal size and shape, and give an accurate cast of the cavity of the chest, it becomes obvious that the diseased part is not only densely solid, but that it is also considerably swollen; the increase in size being much more than could be brought about by the forcible inflation of a similar part of healthy tissue. It is also changed in shape, its flat surfaces having become convex, so that the diseased mass projects above the surface-level of the inflated lung as a rounded swelling' distorting the neighbouring lobes and pushing them from their natural position.

If a section be made through the centre of the affected part, by cutting from the surface towards the root of the lung, the broadest side of the lesion is always at the pleural surface, and the narrowest points towards the root of the lung. This tapering off towards the entrance of the broncho-vascular system is very well seen in the less advanced cases, where the disease is localised to an area with a distinct conical outline. The base of this cone looks towards the pleural surface, and its apex inclines to the root of the lung, at which point it is found to correspond to the broncho-vascular system supplying this region. In some instances this wedge of disease is found accurately to correspond to one of the broncho-vascular territories which have already been mentioned. In the advanced stages of the disease this conical outline is generally lost, owing to the swelling, which rounds off the corners, and also to the irregular spread of the lesion by means of the pleura.

The disease is often localised to one lung, the right apparently a little more frequently than the left; but it is also often found in both, one generally being much more diseased than the other. Sometimes two or more distinct foci of

morbid change may exist, apparently without any connection, there being a broad piece of healthy lung tissue between them.

In the earlier stages of the disease, the boundary of the lesion of the lung is definitely marked and accurately circumscribed. The line of demarcation in these cases always corresponds to the interlobular spaces, all the lobules supplied by a certain set of vessels being engaged, while their immediate neighbours may be perfectly free. The sharp lines of demarcation, not only between the healthy and diseased structure, but also between the different territories affected with the various degrees of morbid change, are amongst the most striking and constant characters of anatomical appearances.

Although the consolidation which is met with in this disease has much in common with that which is brought about by other causes, it differs materially from the hepatisation caused by ordinary pneumonia in man, and these differences form its chief diagnostic characters. The dense solidity is seldom accompanied by any friability of the tissue, but is resisting and elastic, except in those parts where the tissue is undergoing necrosis. Such circumscribed localisation and boss-like swelling only occur, as far as I know, in this disease and in malignant growths. The manner in which the different changes in colour are distributed forms another striking characteristic. There never is any gradual shading of one colour into another, as seen in the acute pneumonia of the human lung, but the different shades are placed side by side, being separated by most abrupt lines. The greatest possible varieties of shade may be seen irregularly distributed in patches of various sizes; here and there a dull buff colour, or a bright crimson, mixed with deep brown or black. The normal pale pink colour of the lung s always lost, being replaced by some of the above shades, often arranged so as to produce a variegated or mottled appearance of the cut surface; or a large black area may exist in the centre of the section through the diseased lobe, and this is commonly surrounded by patches of brown or buff.

Perhaps the most striking appearance seen on the cut surface is the network of pale yellow lines which is distributed over it. The lines forming this network are, on an average, about one eighth of an inch in diameter, always very pale, and sharply defined. They intersect and cross one another, so as to map out the surface into a number of polygonal areas, about half or three quarters of an inch in diameter. These areas are found to correspond with the sections of the lobules, and the pale lines are obviously the swollen interlobular

spaces cut across, the narrow lines which exist in the healthy lung between the lobules being represented by masses of more or less solid exudation, so as to give a cross-section of more than an eighth of an inch. This set of pale streaks, crossing the surface in many directions, reminds one of the whitish veins running through variegated marble; and hence the common name which has been applied to the appearance of the section of the lung lesion. This "marbling" is considered to be the great diagnostic character of the disease.

When examined more closely, the increase in diameter of the interlobular partitions is found to depend on extreme filling of the tissue interstices and lymph channels with a material, which may be a clear fluid, or a translucent jelly; or, in the very advanced stages, a dense fibrinous mass may occupy the entire space.

In every case there are to be seen different shades of this marbling, which correspond to different stages in the disease, or are quite distinct morbid processes. I think it will simplify the description of the morbid anatomy of the lung, and render the steps in the progress of the disease more easily understood, if these various forms of pathological change be considered separately.

Clear Exudation.—The first which I shall mention may be called simply exudation, or the infiltration of the tissues with a clear material. This condition is generally found in the periphery of the diseased region, and forms a very complete case, enclosing the dense forms of consolidation to be described hereafter. This can be particularly well seen where but a small nodule exists. Thus, in one case, where only three lobules were in an advanced state of disease, all the lobules lying in immediate apposition to them were in a condition of pale œdematous-like thickening. When a great extent of the lung is engaged, the boundary of this transparent exudation is irregular and badly defined; but when a limited area only is affected, its margin is sharply marked, and corresponds to the lines separating the lobules.

There seems to be no increase in the amount of blood in the lung in this condition. On the contrary, the blood-vessels appear, for the most part, empty, and the tissue anæmic. The pink colour is replaced by a pale yellow, or dull buff, and at the same time the tissue gets a peculiar semi-translucent look. A clear fluid escapes from the cut surface. This is often mixed with a little frothy fluid, but as a rule the tissue seems quite airless, and does not crepitate. The interlobular spaces are filled with a clear fluid, which widely distends the interstices of the delicate connective tissue.

Except in the cases where the disease is very limited, the part filled with clear exudation does not appear to to have any very definite shape, as it easily spreads beyond the limits of the broncho-vascular territories, passing from one interlobular space to another. When the pleural inflammation is very intense, some of the lung tissue situated immediately under it is affected with this infiltration, but it seldom reaches to a depth of more than an inch or so from the pleural surface. This mode of extension of the exudation, under the inflamed pleura, is of great importance, as it causes destruction of a large part of the lung, and seems to spread the disease with great rapidity over an extensive area of the organ, giving rise to those cases where nearly the entire lung is implicated.

A great variety of intensity of this exudation exists. The tissue appears at first to be soft and spongy; the air is then gradually diminished, and the part becomes brawny and tough. Although the line of demarcation is often very distinct between this clear exudation and perfect consolidation, there are so many degrees of the former, that it seems capable of passing into more dense forms of induration, and it is difficult to find any characteristic which would serve to distinguish all grades of this change from that about to be described, but, as will be seen, the two must be kept quite distinct. The more dense the affected parts the more perfectly marked is the exudation into the interlobular spaces, and therefore the more perfect is the development of the marbling.

The microscopic examination of this translucent spongy kind of condensation of the lung tissue shows that, in the earlier stages, there is but little change in the characters of the tissue-elements. The cavities of the air-cells are filled with a material which is obviously recently clotted serous exudation. It consists of delicate threads of fibrin and a few granular corpuscles. The fibrin threads are variously knotted and granular, and appear to radiate from the corpuscles. The very same kind of material is found to fill the lymph-passages of the interlobular spaces, and the small bronchioles contain some similar fibrinous fluid. The network of capillary vessels around the air vesicles is quite empty of blood, and therefore cannot be well seen in this stage of the disease. The number of cell elements differs very much in different cases. They are chiefly, to all appearance, ordinary white blood-corpuscles. In the cases where the exudation is more abundant, however, there is also a number of cells, which are much larger and more granular, and in the midst of them a very distinct nucleus is obvious. The more

solid and brawny the tissue, the more numerous these large coarsely granular cells are found to be, and the more thick-set is the network formed of the granular threads of fibrin. In the denser forms of disease the epithelium, lining the alveoli, appears to be changed. The cells are granular and thick, and their nucleus becomes prominent, so that the cells, which in the normal lung are so very difficult to see, become so obvious as to attract the attention of the most thoughtless observer.

Opaque Consolidation.—The kind of induration next to be noticed may, as I have already said, closely resemble the result of a long-continued state of the clear exudation just described, which seems gradually to pass through a series of changes, each being more dense than the preceding, until a condition is arrived at which deserves the name of perfect consolidation. But this is not to be confounded with what I call opaque consolidation, from which it differs in its mode of origin, its development not being preceded by the last-described infiltration. It is invariably less resilient, and is more granular in appearance. In the earliest stages of the disease the two forms of lesion can be easily distinguished one from the other.

This opaque condition is always more vascular than the clear exudation, but cannot be said to be much engorged, although here and there the blood-vessels are more or less distended with blood, so as to give the tissue a bright reddish-brown colour. This is the exception rather than the rule, for the usual colour of the section-surface is a pale brownish-red. The parenchyma is not at all translucent, the tissue being quite opaque as well as solid. The spaces between the lobules are densely filled with an opaque dry exudation, which in places can be turned out of the lymph-vessels as distinct casts of their internal conformation. The air vesicles are filled with a somewhat similar material, which, under the microscope, proves to be composed of great numbers of cells, entangled in a dense felt work of delicate granular fibrin threads, united into a dense solid mass. The swelling of the entire part is much greater than in the translucent form, and the spaces between the lobules are much more distended; at the same time they retain their pale straw-colour, and form the striking system of markings seen in the "marbling."

Every part of this true consolidation is hard, heavy, and resisting, but not so elastic as the parts which are translucent and soft. In a few instances the tissue has been found to be friable, apparently from a tendency to necrosis, caused

by want of nutrition, the blood-vessels being pressed upon by the swelling. This is an exceptional case, however, for, as a general rule, the nutrition of the part is not at all interfered with, and the tissue not only retains its firmness, but continues to become more and more solid, until an almost cartilaginous consistence is attained. The bronchial arteries supply the nutrition, and are much enlarged. This induration is associated with a distinct increase of the tissue elements, of the connective-tissue septæ between the lobules, and also of the tissue of the lobules themselves. In some cases, where the animal has been allowed to live a long time, the fibrous thickening of the interlobular spaces increases to such a degree that the lobules are greatly encroached upon, and the vesicular tissue becomes so altered that the lung parenchyma can hardly be recognised. In this stage, which is now rarely met with, the animal being slaughtered when first the disease is recognised, the lung is nearly as dense as fibro-cartilage, creaking under the edge of the knife like gristle. Most of the smaller bronchi are obliterated, and even tubes which should normally admit the little finger have been found closed and impervious, their existence only being recognised by the cartilage of their wall remaining unaltered amidst the dense fibrous tissue in which they lie. The small bronchi are all plugged in this condition, while in the translucent form they are all free and pervious.

This kind of indurated tissue is always pale and bloodless. The pulmonary vessels are usually closed by pressure, but the nutrition of the part seems amply provided for by the bronchial vessels, which are more obvious than they become in the later stages. In many parts thus indurated, the lobular tissue may retain a certain amount of vascularity, its colour then contrasting most striking with the thick interlobular spaces, which are white and glistening.

This fibroid change reminds one of the condition of the human lung in the very advanced stage of interstitial pneumonia which has been called cirrhosis. It differs, however, from that in a very essential point, namely, that there appears no tendency to contraction of the fibroid tissue, such as is found in cirrhosis, causing shrinking of the lung and dilatation of the bronchi, &c. On the other hand, in the fibroid consolidation of pleuro-pneumonia, the infected part invariably seems to be increased in size. It is certainly possible that if life continued long enough the shrinking might take place, for the contracted state known as cirrhosis only occurs as the ultimate result of old interstitial pneumonia.

Microscopic examination of the different stages of this

consolidation shows various gradations in the exudation material. From being a fibrinous mass packed with cells, it changes to a kind of cicatricial tissue. The capillary vessels are frequently found to be filled with blood-corpuscles. The bronchioles and air vesicles contain masses of different kinds of cells, some small, round, and pale, but the majority large, and coarsely granular.

In a few cases, peculiar small bodies were found in the cavity of the air vesicles. In certain parts they were so numerous that two or three came into the same field of the low power (Hartnack, Obj. No. 4). They were most strikingly regular in size, measuring about $\frac{1}{500}$ of an inch in diameter. Their shape was nearly spherical, or very slightly oval. In structure they appeared to be made up of small rods very closely set together, and radiating from the centre of the body. They resisted the action of the strongest reagents, even such as completely destroyed every trace of the lung tissue; in fact everything seemed to make them darker and more distinct. They are like crystals of tyrosin, but they do not respond to the tests for that substance.

The exact nature of these bodies I have not been able to determine, but, from the rarity of their occurrence, I have come to the conclusion that they cannot be said to have any important bearing on the pathology of the disease.

Black Consolidation.—The third form of consolidation to which I wish to call attention is generally found in well developed cases of pleuro-pneumonia, though it is more frequently wanting than either of the preceding forms. Its appearance contrasts most strikingly with the changes hitherto mentioned, and it appears to differ from them in its mode of production. It is at once distinguished from all other kinds of morbid change by its colour, which looks nearly black, so intensely dark is the red of the lobular tissue. From its cut surface a deep red fluid escapes, which stains all the paler structures dark crimson.

The shape of this form of lesion is always that of a distinct cone, the apex of which points to the root of the lung, and its base to the pleura. Its boundary is invariably sharply marked off from the neighbouring diseased tissue, in the midst of which this dark part always lies. The lobular tissue is the only part which has the dark colour, the interlobular spaces being as pale as in the other forms of consolidation. The pale yellow of the interlobular spaces is exceedingly striking in this black part, and also forms a clear trenchant boundary to it. It is easy to satisfy oneself that the extent of this lesion corresponds accurately to that of a vascular

territory. Sometimes an entire district supplied by a good-sized vessel is in this condition. In other cases several small territories are engorged, in which case they commonly all belong to the one district which receives its blood supply from the same main branch.

The extent of this lesion is seldom so great as that of either of those already described, but its weight and density exceed those of any other form. The amount of swelling which accompanies it is also very great, so that when a very prominent knob projects over the surface of the lung, and is covered with very intense pleurisy, one may safely predict that, on section, it will prove to be the base of a cone of this black marbling. It is invariably associated with very intense and acute pleurisy, which often gives one the impression of having commenced at this point, and spread thence over the serous membrane.

The microscope shows the minutest vessels of the tissue to be intensely engorged. Even in those parts where the blackness has not reached its height, all the blood-vessels are tightly packed with blood-discs, which are so pressed together as to form a continuous line of facetted corpuscles looking like a solid injection. The fluid part of the blood seems to have escaped from the vessels and left the solid parts alone in the swollen and tortuous capillaries. In the very black part, engorgement does not adequately express the state of affairs. Here the vessels have given way, and the blood-discs have escaped and filled every available corner of the air vesicles. The larger blood-vessels are also filled with plugs of clotted blood, which adhere to their walls.

This form of black consolidation, which obviously is the condition known as hæmorrhagic infarction, is never found alone; it is always associated with, and preceded by, the other lesions, which seem to be of much longer standing.

Like the other morbid changes, this appears to pass through a series of stages, which depend on the changes taking place in the effused blood and in the nutrition of the tissue. The first step must occur with great rapidity, for one never meets with any initial state of hyperæmia. Where the lesion has lasted for some time, the tissue is found to have lost its elastic toughness, and become hard, dry, and friable, and at the same time its colour has faded to a dull brown. The friability of the part may increase, so as to form a dry crumbling mass, which ultimately undergoes caseous degeneration. In other cases the death of the tissue occurs more suddenly, and the part becomes gangrenous. The dead tissue may be surrounded with a kind of fibrous case, so as to remain shut

off from the neighbouring parts. Sometimes this completely separates, and remains in the chest as a cyst, containing a mass of cheesy degeneration. These cases only occur where the cure of disease has been attempted instead of the animal being slaughtered.

(*To be continued.*) 510

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD JUNE 4TH, 1878.

Present—General Sir Frederick Fitzwygram, Bart., Professor Simonds; Messrs. Balls, Batt, Blakeway, Broad, Cartledge, Collins, Cox, Cuthbert, Dray, Freeman, Greaves, Harpley, Morgan, Proctor, Reynolds, Taylor, and the Secretary.

On the motion of Mr. Dray General F. Fitzwygram was voted to the chair.

The Secretary read the notice convening the meeting.

The minutes of the previous meeting were read and confirmed.

Election of President.

Mr. Dray said it gave him much pleasure to have the honour of once more proposing that General Sir Frederick Fitzwygram be again elected President. To expatiate upon the estimable services which Sir Frederick had so cheerfully and unselfishly rendered during the last three years in his capacity as President would be a work of supererogation, as these services were patent to all. There were many reasons why Sir Frederick should be solicited to resume the office of President. There was an agitation on foot to obtain, if possible, a grant of money from the Government, and there was also a desire to promote a firmer bond of union in the profession. He need scarcely add that Sir Frederick's position and influence would tend to promote, if not accomplish, these worthy and essential projects. He trusted that the Council would, by a unanimous vote, repeat the expression of that confidence and appreciation in Sir Frederick Fitzwygram's merits that they had hitherto manifested.

Mr. Harpley seconded the motion. He was perfectly aware that Sir Frederick had very great scruples in accepting again for the fourth time the honoured position of President of the Royal College; but there were one or two matters yet incomplete, and without his influence and support there would probably be much greater difficulty in carrying them out than there would if he was kind enough to again accept the chair. There were two most important matters in hand, one being the abolition of the

Highland and Agricultural Society's certificate, and the other being the obtainment of some grant from the Government to assist in obtaining a better building. Under those circumstances he hoped and trusted that Sir Frederick would do them the honour of again accepting the post of President of the College.

The motion was carried unanimously.

Sir Frederick Fitzwgram thanked the members for the confidence they had expressed towards him, and for the kindness with which they had given a unanimous vote in his favour. It was not his wish to accept the position, high and honorable as it was. In fact he had fairly made up his mind to decline it; not because the duties were burdensome to him, for, thanks to the courtesy shown, and the general support given to him by the whole of the members of the Council, those duties had not been burdensome He felt, however, that the high office of President was an object of honourable ambition and legitimate desire for every member of the profession, and that it was undesirable, except in special cases, that the office should be held by any one person to the exclusion of others who were fit to hold such an honourable and high position. Circumstances, however, had occurred, and it had been represented to him that, with regard to the abolition of the Highland and Agricultural Society's certificate, he might be, for various reasons, an acceptable negotiator. He was not, as they were aware, a man who held extreme views; but he adhered to the rights and privileges of the Royal College of Veterinary Sergeons most sincerely and warmly. He owed what he possessed, in regard to veterinary matters, to the school of Professor Dick, which was now more or less represented by the Highland and Agricultural Society. This would induce him to go into the pending negotiations in a kind and friendly manner. Having studied at that school, and being friendly with the Highland and Agricultural Society, he thought he might prove an acceptable negotiator; and for that reason—though it was quite contrary to his own views and wishes—he had great pleasure in accepting the high office which they had so kindly placed in his hands.

Election of Vice-Presidents.

The election of Vice-Presidents was then proceeded with.

Mr. Hunt,	proposed by	Mr. Cartledge.
Mr. Withers,	„	Mr. Dray.
Mr. Gowing,	„	Professor Simonds.
Mr. Geo. Williams,	„	Mr. Dray.
Mr. Naylor,	„	Mr. Cuthbert.
Mr. W. Smith,	„	Mr. Taylor.

Mr. Whittle,	proposed by	Mr. Greaves.
Mr. Moore,	,,	Mr. Harpley.
Prof. McCall,	,,	Mr. Morgan.
Mr. Cartwright,	,,	Mr. Reynolds.

On the ballot being taken it was found that the voting was as follows :—

	Votes.
Mr. Gowing	14
Mr. Cartwright	14
Mr. Withers	13
Mr. Hunt	12
Prof. McCall	11
Mr. Williams	11
Mr. Smith	10
Mr. Whittle	9
Mr. Naylor	6
Mr. Moore	5

Messrs. Gowing, Cartwright, Withers, Hunt, McCall, and Williams were therefore declared duly elected.

On the motion of *Mr. Dray*, seconded by *Mr. Batt*, Mr. Withers was re-elected Treasurer.

On the motion of *Mr. Dray*, seconded by *Mr. Greaves*, Mr. Coates was re-elected Secretary and Registrar.

On the motion of *Mr. Dray*, seconded by *Mr. Greaves*, a vote of thanks was unanimously accorded to the Treasurer, who, Mr. Dray remarked, did his duties most efficiently without the slightest emolument.

This concluded the business of the first meeting, after which

A Second Special Meeting

was held.

The Secretary read the following letters:

(1) From Professor Williams, Mr. Moon, and Mr. Fleming, regretting their inability to attend the meeting.

(2) From Mr. Proctor, acknowledging his election as a member of the Council.

(3) From the prizemen, acknowledging the receipt of prizes and medals from the Royal Agricultural Society.

(4) From Professor McCall, wishing to be informed whether Mr. Robert McCrindle, who entered under the old rules, and had been rejected three times at his first examination, was eligible to come up for examination in July next.

The Secretary stated that he was informed he was ineligible, in accordance with Bye-law 37.

(5) From the Military Secretary of the India Office, containing a list of the Indian army veterinary surgeons which was corrected for the register, and also containing the report of deaths.

(6) A memorandum from the Veterinary Department of the Privy Council, suggesting several alterations in regard to the title of veterinary inspector in the register.

The Secretary was instructed to comply with the suggestions contained in the letter.

Candidates for the Fellowship Degree.

The Secretary stated that two candidates had recently applied to him, and two others on the list had proposed coming up for examination. There were also three who made application in January last, but who subsequently wished to defer the examination to a future time. He proposed to write to those gentlemen, asking if they would be inclined to come up; and it would be for the Council to fix when the examination would take place.

The Secretary was instructed to write and ask the three candidates whether they would come up for examination; and that a meeting of the Court of Examiners would take place after the July examinations.

The Secretary stated that Professor Brown had forwarded a copy of the Report of the Select Committee of the House of Lords on the Contagious Diseases (Animals) Bill, the Minutes of Evidence taken before the Committee, and the Annual Report for 1877.

On the motion of *Mr. Cartledge*, seconded by *Mr. Taylor*, a vote of thanks was passed to Professor Brown for his kindness in forwarding the above-mentioned works.

The President then, in accordance with the notice previously given, moved that a Committee be appointed to confer with the Directors of the Highland and Agricultural Society with a view to the discontinuance of their examinations, so that the profession might be brought together in unity and brotherhood.

Mr. Taylor seconded the motion, which was carried.

The members of the committee appointed were the President, Mr. Jas. Collins, and Mr. Wm. Robertson, of Kelso.

The Petition of the Royal College of Veterinary Surgeons to Her Majesty's Government for aid in order to render its services more extended and beneficial to Medical Science in general, and especially to Agriculture and the Public.

The prayer of the petitioners sheweth that in every country and more especially in our own, the veterinary profession is of direct and great public utility, and that the value of its services is yearly increasing with the rapidly rising value and number of horses, cattle, and other useful domesticated animals. That while the services of the profession are sought for to assist in the multiplication and perfecting of the different breeds of these animals, and to indicate practically and scientifically how this may be best and most economically effected, its assistance is of special importance in the prevention and cure of the many accidents and disorders to which such animals are liable—a liability which becomes increased with their higher breeding and more artificial treatment. In the prevention and suppression of contagious maladies among animals the veterinary profession can lay strong claims for recognition as a useful public body; and as some of these disorders are transmissible to the human species and produce serious, oftentimes fatal, disease in it, its services to human sanitary police are most essential and important.

In this direction, then, not only does veterinary science assist in increasing the number, utility, and value of the domesticated animals, and protect them from the evil consequences of this domestication and improvement, but it remedies their diseases and accidents; and in preventing or suppressing the destructive contagious maladies to which they are liable, it preserves a large portion of the national wealth from loss, while it protects the public food supply, and guards the community from the dangers attending the consumption or use of diseased flesh, milk, or other animal products.

In addition to being the medical and sanitary guardian of the immense animal wealth of the country, veterinary science is also largely concerned in the promulgation of just views as to the humane treatment of animals in health as well as in disease; and it devotes itself in a special manner to the elucidation of the many animal disorders, their nature and causes, as well as the medical measures which will most economically and effectively prevent or cure them. As an exact knowledge of many at present obscure maladies of mankind can only be gained by studying the same or analogous diseases in animals, veterinary pathology in this way becomes intimately allied with human pathology, and can greatly assist in advancing it, and thus

materially aid in preventing, or at least alleviating, human suffering.

The great value of veterinary science in these different directions has been recognised in Europe only at a comparatively recent period; but this recognition has impelled every European country, except our own, to take this science under its especial and immediate care. Consequently, we find all these countries in possession of schools, several on a large scale, wherein veterinary science is cultivated and taught by eminent men; the schools being maintained by the respective governments at the public expense, as they were instituted for the public benefit.

This country has been the last to estimate the value of veterinary science, and it has not yet recognised, except to the most insignificant extent, the benefits it has conferred, and may continue to confer, upon civilisation and humanity.

The four veterinary schools in England and Scotland are private institutions, each belonging either to a single individual or the property of subscribers, who receive the value of their subscription in advice or medical treatment of their animals.

Notwithstanding this disadvantage, and the lack of Government aid, the veterinary profession in Britain determined to exert itself in promoting veterinary education and in maintaining the scientific knowledge of its members at as high and uniform a standard as was possible under the circumstances. Acting upon this determination, in the year 1844 it petitioned Her Majesty's Government for a Charter of Incorporation which would enable it to exercise the powers of a corporate body, and utilise these powers to the advantage of the veterinary profession and the public.

The prayer of their petition was granted, and the Royal College of Veterinary Surgeons was instituted in 1844. Since that date, up to the present time, this corporation, while labouring under some great disadvantages—the chief of which was its want of funds and public support—has discharged to the best of its power the ever-increasing and important functions imposed upon it by the terms of the Royal Charter of Incorporation.

While endeavouring to further the interests of its members, its principal and most responsible duty has been the promotion of veterinary education, by its instituting, from time to time, such tests of professional knowledge in those who sought its diploma, as would not only protect its own reputation as a degree-conferring body, but would also afford a guarantee to the public that the holders of this diploma were competent and fully qualified veterinary surgeons. These tests have been applied to candidates for the diploma by the highest medical and veterinary

authorities this country has produced, and the candidates who come from the schools of England and Scotland are submitted to a severe and uniform examination. The subjects in which the students are instructed, as well as the period of study, are regulated by the Royal College, and everything pertaining to the advancement of veterinary medicine, and its utilisation for the public good, is carefully considered by it.

Since its incorporation in 1844 the Royal College of Veterinary Surgeons has provided the country with upwards of THREE THOUSAND qualified practitioners in animal medicine and surgery. These graduates have not only practised their profession with advantage to the three kingdoms, but every part of our great empire has benefited from their presence, while in the army they have served the country in peace and in war.

The institution which has done so much public and professional service could not be maintained without considerable expense and much sacrifice of time and thought on the part of the profession. It has never received any extraneous assistance; but has existed on its own efforts and the examination fees obtained from its graduates. The latter has been necessarily fixed at the lowest possible sum, so that they might not deter poor but worthy men from joining the ranks of a profession which had to fight its own way to position and appreciation.

But with the rapidly developing demands of medical science, the greater amount of knowledge required from members of the veterinary profession—due to the higher and more exacting services they are called upon to render—and the yearly increasing expenses incurred by the Veterinary Corporation in maintaining an ever-rising standard of efficiency, it is found that the past rate of progress cannot be sustained without some help from the country. The annual income is not sufficient to defray the heavy expenses attending the graduation of students, and keep up a suitable building for the work of the Royal College. The place where its business is now transacted, and where it has its home, is every way inadequate to its requirements, and does no credit to a country which possesses the finest and most valuable domesticated animals in the world. It is situated in one of the most undesirable parts of London, has no accommodation, and is destitute of a museum for instructional purposes, and of other facilities which are urgently needed, if veterinary medicine in this country is to keep pace with that in other countries.

In this crisis in its history, the Royal College of Veterinary Surgeons of Great Britain and Ireland feels itself compelled to appeal, for the first time, to Her Majesty's Government for countenance and support in its laudable desire to still further benefit the country by continuing to improve veterinary education, as

without this countenance and support such improvement is now impossible.

It is obvious that veterinary medicine is as yet in its infancy; it has only of late years begun to yield some of the benefits it will undoubtedly confer, when properly cultivated and fostered. Up to this time the Royal College has exerted itself to the utmost to serve the public interests without asking for any acknowledgment or compensation from the public; but in the circumstances in which it is now placed it can no longer attempt to do so with dignity to itself or advantage to the community, without aid from the country it has so well served and so largely benefited. Though these benefits have been so great and so manifest, yet of all the learned bodies the Royal College of Veterinary Surgeons would appear to be the last to obtain recognition or assistance.

Your petitioners would humbly beg to draw attention to the fact, that in 1799 the Parliament of this country voted the sum of £15,000 for the museum of the Royal College of Surgeons, and that in 1806 another sum of £15,000 was voted in aid of the erection of an edifice for the display of an arrangement of the Hunterian collection; while a third grant of £12,500 for the same purpose was subsequently voted, and in 1847 another sum of £15,000 in aid of an extension of the museum buildings. Your petitioners may be also allowed to refer to the fact that the Royal College of Physicians hold premises under the Government at a merely nominal rent, while the Government has found a local habitation for nearly every scientific society in London.

Your petitioners would beg most earnestly to assure Her Majesty's Government that they are only actuated by an unselfish and patriotic desire to directly benefit the country in soliciting its assistance, and whatever aid it may be pleased at present to bestow will be repaid tenfold hereafter.

The Royal College of Veterinary Surgeons is anxious and willing to continue its labours for the public good, but it feels that, in return, it has a strong claim for recognition in what it has already accomplished and what it now seeks to achieve.

It therefore humbly prays that Her Majesty's Government will graciously take into consideration the prayer of the petitioners, and favourably respond by granting either a building which would meet the requirements of the Royal College, to be maintained at the cost of the corporation, or a sum of money sufficient to provide such premises.

Mr. Cartlege seconded the motion, which was agreed to.

On the motion of the *President*, seconded by *Mr. Dray*, a vote of thanks was accorded to Mr. Fleming for his trouble in drawing up the petition.

The Secretary was instructed to have 200 copies of the petition printed for circulation.

A vote of thanks having been passed to the President for his conduct in the chair, the Council adjourned.

CENTRAL VETERINARY MEDICAL SOCIETY.

On Germs: the Part they Play in the Production of Disease.

Tuesday, May 7th, 1878, Professor Axe in the Chair.

An essay on this subject was read by Mr. Greaves, who said in conclusion that they had been recently delighted to see Professor Axe in Yorkshire, where, in some remarks on "Germs," he had thrown much light on the subject, and he had no doubt that he would be able on the present occasion to clear up some of the points which hitherto had been in darkness.

Professor Axe said, as Mr. Greaves had just remarked, he had recently enjoyed the pleasure of listening to the essay which had just been brought before them, while on a visit to the Yorkshire Veterinary Medical Society. But this fact did not in the least degree detract from the interest and pleasure he felt on the present occasion. The subject of the paper was one which at the present time occupied, if it did not even convulse, the scientific world. The question of germs and germ life was the stirring subject of the hour, and called into the sharpest activity leading members of almost every branch of science. It was not, he said, simply a question of pathological interest; it was one that involved that mysterious, and as yet abstruse, problem, the origin of life, to the solution of which so many able minds have devoted their greatest capacity. The biologist, the chemist, the physicist, were alike concerned to know the special conditions out of which life was evolved; but the more immediate and important aim of the pathologist was, as indicated by the essayist, to determine, for the benefit of man and beast, the part played by living germs in the production and propagation of disease. That the lower forms of life did enter into and seriously damage the structure and disturb the function of higher organisms, was a fact with which we were abundantly familiar, and of which we needed no further assurance than that so largely furnished in the life-history of human and bestial parasites. It was not, however, the tangible living animal forms alone that infested and preyed on the life of man and beasts. The microscope had demonstrated, again and again, that in the extreme limits of animal and vegetable life there were found elements of most loathsome and troublesome diseases; elements whose morphological characters were as familiar to us as were

those of man. He need hardly say that this was not exactly the case in regard to what are known as "germs;" but in view of the rapid strides which had recently been made in the study of contagia, they were not without hope that ere long research would accomplish much towards the differentiation of disease germs.

There was one question which seemed to him to commend itself to their minds with considerable force, and about which all of them should be fully assured before endeavouring to deal with the ulterior and perplexing question of germ action—he alluded to the existence or non-existence of disease germs. Was it the fact that organised matter, endowed with a reproductive power such as was suggested by the term "germ," *i.e.*, having the constitution and nature of an egg, really played the part of a disease factor; and if so, on what evidence did such a fact rest? The difficulty which belonged to a physical demonstration of microscopic forms was, at all times, adverse to conviction, even among those in whom unphilosophical faith ran high; but so strong and irresistible were the facts developed in support of the germ doctrine of disease, that to know and appreciate them was to be convinced of its reality. Without referring to the early experiments of Tyndall, which showed that the air teemed with particulate matter, organic and inorganic, living and dead, they had the still more convincing testimony of Pasteur, Lister, Chauveau, and Dr. Sanderson in all of whose researches we recognised a link in the chain of evidence relating to the existence of disease-producing germs. Pasteur, by his process of filtering air through gun cotton, showed that the atmosphere contained organised particles, which under favourable conditions, as when allowed to fall into putrecible solutions, reproduced themselves in countless numbers. He further demonstrated the presence of living forms by the negative results which followed the calcination of air in regard to the same media.

In these experiments they would recognise at once the existence of particles of matter possessing the property of reproduction, and as such acting the part of what we understand by the term "germs." The antiseptic system in the treatment of wounds, and the ligaturing of arteries as advocated and practiced by Professor Lister, was based on the knowledge of the existence in the air of organised particles, to which suppuration and the unfavourable results of surgery were referable. The filtration process of Pasteur was precisely what Lister adopted, when he applied to wounds a covering of cotton wool. In both instances, the living organised matter was intercepted, as was the precipitate by the filter paper of the chemist. But it might be said that such experiments bore lightly on germs in relation to disease. He would, therefore, further remind them of the important facts enunciated by Chauveau, and confirmed by Sanderson. Chauveau adopted a method or research, which developed the most valuable and interesting facts. He filtered the virus of glanders and

sheep-pox through porcelain, and was thus enabled to separate the solid from the liquid portions of the virus, and afterwards to test separately the infecting power of the two constituents. He then found that while the solid particles arrested by the porcelain were capable of exciting disease, the liquid portions possessed no such property. He demonstrated, in fact, that the actual contagia in these particular maladies were composed of insoluble, indiffusible particles; and, moreover, he showed that when such particles were implanted in the system of healthy animals, they multiplied their kind, and displayed in this one act alone the special property of germs. Sanderson, in pursuing a similar course of enquiry, found, likewise, that the infective property of the blood in cattle plague existed in the material which would not diffuse through parchment paper. With such results as these before them, the existence of disease germs could no longer remain in doubt. Of the precise form and higher endowments of these living particles they were not acquainted. As yet, the microscope had not enabled them to distinguish the disease-producing germs from an ordinary bioplast, nor had chemical science defined any special formula as belonging to them.

The part germs played in the production of disease, he continued, was a matter of the highest pathological interest, and could best be studied in connection with eruptive fevers. In these affections it was observed that after the introduction of the virus into the system a definite period elapsed before the phenomena of disease were developed. In that respect, disease germs conformed to the general conduct of germs as they recognised them in a tangible form. Just as the first phase of vital activity in a grain of wheat was hidden from view, so was the manifestation of life in the disease germ. It was not until they saw the stem of the one and the eruption of the other, that their vitality and powers of reproduction were known. Inasmuch as new matter was evolved in the growth of the contagium, that could only be effected by the appropriation of one or more of the constituents of the body; but which, or how many of those constituents, or in what condition, were questions as yet unsolved. That those constituents were important to life was suggested by the extreme prostration and rapid emaciation which followed the incubation and propagation of the contagium.

Various, he said, were the doctrines which, from time to time, had been propounded by different observers as to the precise *modus operandi* of contagia; but the confliction of the arguments employed, and the want of unanimity in the interpretation of clinical and physiological phenomena, rendered the most commendable doctrine unacceptable.

Mr. Greaves thanked the President for the clear exposition he had given of the facts in connection with germs, and said he was much pleased with the manner in which the question had been taken up. The President had proved himself to be a close

thinker and reasoner; and it was a subject which required both. There was, indeed, a reality in these germs, but it was only the advanced thinkers of the present day who appreciated the importance of the subject; and he had no doubt that, as their knowledge permeated a little further, he would in a few years enable them to answer the questions which, at the present moment, they were unable to answer. The President had agreed with him in every particnlar but one, and that was the nature of germ life. The President believed that the active principal which existed in the atmosphere was an organism. Now he considered that it was not an organism until there was added to it, or till there had come into contact with it, dead animal or vegetable matter. It had never been proved that those germs that floated in the air had life in them, but only that as soon as any of them came into contact with dead animal or vegetable matter, they were perceived to be alive, and to float about with great rapidity; it had never been proved that any such existences took place before they had come into contact with dead animal or vegetable matter. He called them germs; the President called them organisms; that was the point on which they differed. It was a point of importance, and he had no doubt, as science cleared off the mist a little more, that the point would be cleared up to the satisfaction of them all.

Mr. Moore said the essayist had mentioned some experiments and remedies tried in Manchester. He would like to know when they were instituted, for, if they were to believe the reports of two or three years ago, diseases had been very fatal in Manchester and the neighbourhood which ought to have been prevented. He would also like to know rather more distinctly the difference between Mr. Graves and the chairman. The essayist called them germs, and the chairman organisms. He supposed it might be at one time a germ and at another an organism. Perhaps it was a germ when it floated in the air, but an organism when it got a proper "nidus," or, as it were, got into a living body and became developed into an organism.

The President said he was quite one with the essayist in terming what they were now speaking of as germs, by which he understood certain particles of living organised matter capable of reproducing themselves, as illustrated by the contagia of specific fevers; and he used the term organisms in this sense only as applied to germs. The property of reproduction was innate in the wheat grain. So it was, he apprehended, in the germs of specific fevers; but they did not manifest their vitality and their property of reproduction until placed, like the wheat, in a soil which would furnish the materials of growth and development. Mr. Moore said then it might have the power of life, though not possessing life. He contended that it was not living till it came into contact with the soil.

Mr. Greaves said there certainly was force in what Mr. Moore said; and although he could not illustrate his meaning

by anything very clear and tangible, that illustration which Professor Axe gave of a grain of wheat might be taken as a very fair illustration of what they meant. The grain of wheat did contain life, but it could not propagate grains of wheat until it came into contact with suitable surroundings to enable the life that was in it to propagate and develop itself. It would be almost idle to dispute about this point; they ought now to try to come to the application of the subject. They were satisfied that the germs did exist in the air. In a stable containing glandered horses the air became contaminated with glanderous matter, which would pass from one stall to another, and up and down the stable. If they took these horses out they still left the poison floating in the air: if they put other horses in, it was a hundred to one that some of them would become infected with the poison. Now, he would be glad if they could enter into the matter, and thus apply the subject, and try to gain some advantage of knowledge they did not previously possess. He had known stables were every precaution had been taken to destroy the virus of glanders. He had gone into stables where they had been emptied. He had known a thirteen-stall stable emptied three times over of every horse during a period of about twelve months; you might go into that stable to try to find fault with it, and he could almost defy them to find any fault. They could almost eat their dinner off the stones, or out of the manger. The boskins were as clean as a butcher's block; the ventilation they would find to be perfect, or thereabout; the sewering or soughing had all been taken up, and new gravel put down, the paving stones taken up, all the *débris* taken away and fresh gravel put in, and still the disease existed. Now where did it exist? Was it in the wood? Or was it in the atmosphere, which they might suppose had been blown out over and over again? He was not sufficiently clear on the point in his own mind to say how it was; but he had known, in such a stable, the white hot irons to be put in when everything had been used, and the place lime-washed over and over again, with carbolic-acid dressing to the floor, McDougall's powder and other things, and still the disease had existed as rife as it was before. He had then, as he had said, put in his hot fires, carried them into every stall, and let them remain for an hour or even for days, and then carried them into another stall, and then another. From that time there had been no more disease in that stable; and he had known this in several instances. One fact was worth a thousand theories. It might be there were some instances where it had not succeeded; but in several it had succeeded completely. He gave them no opinion on the process, but would ask them in return to give him their opinion of it.

Mr. Moore asked if it had never struck Mr. Greaves that this infectious matter was in the bricks. It was a fact well known that an ordinary brick would absorb a pound of water, and according to the state of the atmosphere, bricks would be giving

off a lot of that water at one time, and at another time absorbing a lot; and very often these cases of glanders would be found to be taken from the bricks. He knew of an instance where a man had rather too many horses in his stables, and he had always glanders amongst them. The bricks were giving off emanations as he had described. He would give them a strong illustration of this, relating to a he-goat, which was tied up in a stable. He emitted a strong smell, and for years after that animal was dead and gone the emanations from the bricks were very strong indeed. Now, he contended, if such was the case with an animal such as that, it would be the case with glanders and in other infectious diseases, and he thought that might be a pretty fair solution of Mr. Greave's cases of glanders happening from time to time. He granted it was a very good plan burning it out; it would dry the bricks and extract a good deal of the poison, but probably not all.

Mr. Cox said that one scarcely knew whether to endeavour to add anything, or to feel that enough had been said. They were very greatly indebted to Mr. Greaves for coming amongst them, and for opening a subject which might very well last the association to the end of the session. The subject was most important, and it would be difficult to carry on the discussion among themselves, because they all must acknowledge themselves to be learners, with very little information to impart. They must take much on trust from men who had results of experiments to place before them, from having been enabled to devote their time to researches in this matter. Whatever subject they took up in connection with germs, would in itself be a special subject for an whole evening. In this question raised about glanderous matter it occurred to him, first, whether, in the case specially introduced by Mr. Greaves, in reference to that excellent stable in which glanders had reappeared, they were always fresh horses that were introduced, or whether some of the original occupants were introduced after the cleansing. Perhaps he would tell them whether he was quite sure there was not any disease latent in one of those animals which might account for the cases occurring. They knew that a horse might easily be overlooked, and be brought back and do much mischief. In reference to the bricks holding the poison of glanders, and giving it out by evaporation and producing the disease of glanders in other horses previously healthy and sound, he confessed he was very sceptical. He was by no means sure whether he had ever met with a case of a horse contracting glanders purely by infection. He knew it was very contagious, and he believed that infection was the great medium through which glanders was introduced and propagated in this country. He had known scores of cases of horses in the same stable where contact had not absolutely occurred pass through the ordeal for a long time without becoming glandered. Again, cases where stables had been thoroughly cleansed and thought to to be disinfected, and where a horse had been put back again after being placed in

quarantine, yet glanders had developed; but in every case he believed there had been glanders, in some one of the horses, in a form capable of propagating it.

A case he well remembered some twenty years ago came to his mind of a stable holding thirty horses, in connection with Messrs. Whitbread's brewery, in the oldest stable in the place, where, for want of space, the horses used to stand in a long manger without stalls or divisions of any kind, so that probably five horses would be kept in the place of four throughout. The stable was in the form of an L, the end of the stable forming a *cul de sac*, the place was badly lighted and badly ventilated, with no direct outlet, but some small windows in half the stable; it was also badly paved. If ever he was called there in the night, or early in the morning, he had at once been struck with the fœtid emanations from the horses, and there were accumulations of drainage, so that it was no wonder they were continually having cases of glanders in that stable. That stable had been cleansed, and whitewashed, and the horses taken to another part of the establishment, where they seemed doing well; but when returned there again glanders and farcy reappeared. As it was becoming a very serious matter, losing horses like that, and the Firm had no such loss among their other horses, numbering one hundred, it was determined to have the stable repaved and properly drained; they had also a shaft with a diaphragm put up at the end of the stable; the place thoroughly cleansed; one or two old worn-out horses, which were looked upon with suspicion as possibly harbouring disease, were killed, the others went back to the stable, and they never had another case of disease. It was looked upon by the Firm, then, that the drainage and ventilation, and the shaft which had been put in, had put a stop to the retention of poisonous matter (not necessarily glanderous matter) from the other horses.

Mr. Greaves said, in answer to Mr. Cox, that the horses were removed out of the stable two or three at a time. There was no one horse in particular left in the stable alive; they all died off. No one horse, or two remained alive. In addition to the fires, he had made an alteration in the ventilation, having had two large holes made through the wall on the ground surface, and one through the highest part of the stable. The horses were the same still under the new company.

Mr. Rowe (Hon. Sec.) said that a few sentences which passed from the essayist reminded him of something which might be worthy of repetition. Some years ago, a Mr. Lens Aldous submitted to him a number of photographs of the human breath taken from a hospital, of which he said he had the free run. The patients suffering from all manner of diseases breathed, and the breath was conveyed to the glass, covered, and then photographed; and these photographs, if correct (as he had no reason to doubt), gave distinct forms in the case of each disease: a process which Mr. Aldous claimed as being original. Unfor-

tunately he did not purchase any of them, and had forgotten the named assigned the process. The photographs, looked at generally, were extremely interesting. It was maintained by him as diagnostic of destructive diseases.

A short reply from Mr. Greaves, and the meeting adjourned.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of this Association was held in the London Hotel, Edinburgh, on Wednesday the 5th of June, Professor Baird, of the Dick Veterinary College, president; occupied the chair. There was a fair attendance of members.

Several interesting pathological specimens were presented for the inspection of the members. The first of these was a case of hernia of a portion of the small intestine of the horse, through the foramen sinistrum of the diaphragm. The case occurred in the practice of Mr. Rutherford, Edinburgh, and was especially interesting, inasmuch as it was evident, from the nature of the adhesions formed between the intestines and the diaphragm, that the hernia had existed for a considerable time although the animal had been worked till the day on which it died, previous to which it had never exhibited any very marked symptoms of illness.

The next specimen (which had been obtained by Mr. Cunningham Slateford) was an extensive aneurism of the cæliac axis of a horse. With reference to this case, Mr. Robertson Kelso stated that such cases were by no means so rare as was generally supposed. He related the particulars of several instances which come under his own observation.

Professor Walley exhibited and described the remaining specimens of which the following are the particulars.

1. Encephaloid Cancer of Left Kidney of Cow.

Subject. A five years old cow.

History.—Unknown—sent into Leith Abattois for slaughter. Said to be affected with Pleuropneumonia zymotica.

Mr. Reed, V.S. Inspector, called my attention to one of the kidneys after its removal from the body; also informing me that numerous growths were found on the omentum of a somewhat similar character, but harder. A quantity of fluid was also found in the peritoneal cavity. The kidney, with its surroundings, at first sight had the appearance of a ragged encysted pleuro-pneumonia lung, a smaller portion of its inferior surface being visible and the remainder being covered by an immense mass of adventitious matter, which resembled, somewhat, a mass of organised lymph. The whole mass weighed about 24 lbs. On making a longitudinal section through it, the kidney was discovered embed-

ded in the new growth, the organ itself being about six times its normal size, and separable by the finger from the capsule which was extremely thickened and intimately connected with the surrounding material. The external surface of the kidney had preserved its lobulated character; internally it was considerably altered, the inner pyramid at connection, tissue and the pyramids themselves being largely invaded with the encephaloid matter. Some of the pyramids were entirely destroyed; in others about $\frac{1}{8}$ to $\frac{1}{2}$ an inch of the base was left—only one apex could be discovered. The cortical portion was not so much removed or invaded here and there, being very thin but, on the whole, about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch thick. In a few spots invasion could be seen extending in it and through it so as to be visible on its internal surface. The posterior third of the kidney was entirely destroyed, being replaced by masses of encephaloid, varying in size from a walnut to—in one instance—a large orange. The largest mass had undergone softening, fatty degeneration, and was bestudded with small cysts containing creamy matter—in some instances sanious, urinous in others. Where the contents of the cysts were pressed out an alveolar stroma was left. The colour varied considerably—in the more recently invaded portions there was considerable vascularity, and hence a variegated appearance; in the advanced portions the colour was of a dirty grey and here and there a yellowish grey. Several cysts were found in the interior of the kidney containing a dark sanious-coloured fluid. Another large cyst containing the same kind of fluid was discovered between the lobules externally, and a still larger one in the same position containing a yellow transparent fluid, the cyst and the fluid closely resembling a hydatid cyst and contents; but on collecting some in a glass for microscopic examination, and allowing it to stand for a few hours, a distinctly urinous odour was evolved, and several crystals of oxalate of lime, with a few cancer cells, were detected by the aid of the microscope. The adventitious mass surrounding the organ was firmer in consistence, opaque, white; exuded a large quantity of cream fluid on section or on pressure with the back of the knife; had blood vessels scattered through it, and here and there isolated patches of a very vascular nature; its internal surface (moulded to the exterior of the kidney) was concave and smooth, the external surface being lobulated and more vascular. Under the microscope numerous epitheloid cells were seen, some containing cancerous matter. They were intermixed with lymph and red blood-corpuscles, and in the less advanced portions with small quantities of delicate fibrillated stroma. In every part, but more particularly in the degenerated portions, myriads of free nuclei were present with molecular matters and broken-up cell structures.

As I did not see the post-mortem, I can give no idea of the character of the omental new formations; but I have no doubt from Mr. Reid's description, they were of a similar nature to the usual growth. Whether the latter was secondary or primary I

cannot pretend to say. I am inclined to think they were secondary. In the portion of the growth lying over the upper surface of the kidney, the posterior part of the left diaphragmatic crus was detected. It had lost nearly all the physical characters of healthy muscle; being soft, of a dirty brick red colour, and rather glistening.

Diffuse Spermatic Aneurism.

Subject.—A Danish bull, rising three years old. My attention was directed to this animal by the enormous size of its scrotum. It was three times the normal bulk, and about 18 inches in length.

On manipulation I quickly discovered that I had to deal with aneurism of the left spermatic artery, although I had never seen or heard of such a case before, either in man or animals; indeed I look it as unique in our list of aneurisms.

The skin of the scrotum was slightly reddened, increased in temperature, and attenuated; its surface on the left side was irregular (nodulated), the irregularities corresponding to the coils of the artery, which in several places was interruptedly dilated. On the application of slight pressure with the finger on the surface of these elevations, a distinct purring thrill was detected; and, by auscultation, a humming bruit.

Pulsation in the artery was distinctly visible to the eye, the pulsation numbering 86 per minute and synchronous with the heart's action. There was very slight fever, although the animal evinced signs of much pain by uneasy movements and abduction of the fore leg and by lameness in progression. He was in very fair condition.

The right testicle was normal; the left considerably reduced in size, and its vaginal sac contained a small quantity of fluid, as detected by fluctuation: it was forced upwards and inwards by the pressure of the aneurism.

Immediately on the death of the animal I removed the scrotum and testicles *en masse*, and as close to the abdomen as possible, when the mass very quickly reduced to about half its original size, owing to the artery being emptied of its blood.

Careful examination of the abdominal portion of the artery showed that it was dilated up to its origin, but there was no evidence of cardiac or other vascular derangement in any other part of the body.

My colleague, Professor M'Fadyean, undertook the injection of the artery, in which he succeeded very well, the wax returning by the vein; subsequently, that gentleman assisted me in the dissection of the specimen.

The right testicle and blood-vessels were found normal, the left considerably atrophied and bent at an acute angle at the globus major, the globus minor being superiorly placed. No wax was discoverable in any of the vessels of the testicle itself, showing

that they had been occluded by the malposition, and thus accounting for the atrophy. The vaginal sac contained two or three ounces of straw-coloured serum. The wax had passed into the spermatic vein, which was thoroughly injected. Slight hæmorrhage had taken place in the coats of the artery at the seat of one of the dilations. When dried, the artery with the testicle weighed 27 ounces. Allowing $1\frac{1}{2}$ or 2 ounces for dried structures, the quantity of wax contained in the artery would be 25 ounces.

The enormous coils give the specimen a remarkable and interesting appearance.

Complete Torsion of the Cervix (with Considerable Thickening and Dilation of the Os) of a Cow.

Subject.—Small Danish cow which had been landed from Copenhagen on the 7th, and purchased in Edinburgh by a Leith dairyman on the 8th of March. She travelled to Leith, and shortly after her arrival lay down, never afterwards rising.

My attention was directed to her on the 13th of March. I was informed that since purchase she had eaten very sparingly—had, in fact, been supported mainly on gruel.

On external manipulation I discovered that the uterus contained a very large fœtus, and suspecting that this had something to do with the paralysis, I made a vaginal exploration, which resulted in the detection of torsion of the cervix uteri. I was only able to pass two fingers, and that in a half spiral manner, from left to right. Rectal exploration confirmed the diagnosis, and also revealed the further fact that great thickening of the cervix had taken place. As my patient was in a very exhausted condition, and as I had not sufficient assistance, I determined to delay operative interference for several hours supporting her, in the meantime, with stimulents and gruel.

Deciding upon attempting reduction of the twist by version, or, failing this, by making an incision through the abdominal walls, and introducing by hand into the abdomen, I proceeded, in the evening, with the aid of several students, to carry out my intention.

The animal was turned twice completely over, from left to right (in the same direction as the twist), with the effect of nearly reducing it; but, on proceeding to turn a third time, I discovered she was dying, death taking place in a few minutes afterwards. After death I had the body turned once more, when I found that the torsion was completely reduced, but that the os and cervix were thoroughly occluded by new material deposited in their structures.

Autopsy.—Unfortunately, I could not be present when the carcase was dressed, consequently I only saw the uterus and its contents after removal from the body, and was thus prevented from making any investigation as to the condition of the ligaments. The uterus contained a large fully-developed fœtus, with placenta

and uterine fluids; its coats were extensively thickened throughout, its blood-vessels engorged with coagulated blood, and its lymphatics with lymph: the seat of the torsion was indelibly marked by the blanched, compressed, and twisted condition of the structures of the involved parts. The cervix, anteriorly to the torsion, was thickened to the extent of several inches all round, the vaginal coats normal, and its large vessels empty; the large vessels of the uterus (arteries and veins) contained immense, firm thrombi.

There had been no interference with the rectum, such as is usually seen in these cases, from involvement of the recto-uterine folds.

The cause of the lesion or length of time which it had been in existence I had no means of determining; but from the thickened and indurated condition of the cervix uteri I am of opinion that it must have been in existence for several weeks. Had the animal been strong, and the os and cervex uteri normal, I entertain no doubts as to the success of operative interference.

Professor Baird then delivered his presidential address. In the first place he took the opportunity to thank the members of the Association for the great honour they had conferred on him in electing him their president. It was with feelings of fear and pride that he had accepted the high position—of fear lest any shortcomings of his should mar the usefulness of the Association; and of pride that he should have been thought worthy of the dignity, seeing that the chair had previously been occupied by gentlemen of great eminence in the profession. He proposed to run over, in rapid review, the progress of the profession since first he entered its ranks. It was in the year 1843 that he for the first time entered the gates of his Alma Mater. The students at that time were under the tuition of only one master, Professor Dick, who loved and laboured to elevate the profession, and who has left both a name and means behind him for its advancement. The lectures then comprised veterinary pathology, and anatomy; but all the students were privileged to attend certain classes at the University. As time wore on, however, Dick, with his natural shrewdness, saw that the profession was growing in favour with the public, and he likewise saw that to increase this growth a more complete course of instruction was required, and to bring about this he found it necessary to organise a staff of teachers. *Professor Baird* then traced the various stages in the development of veterinary science as taught in this country. He showed how materia medica, chemistry, physiology, and lastly botany had been successively constituted separate and distinct branches of study, and how, as a necessary consequence, the period of study had to be lengthened until the curriculum now extended over three winter and two summer sessions. He went on to say that from the high standard of education received, veterinary surgeons ought now to be able to take their stand alongside the members

of the sister profession. It might be remembered that at the time of the last great outbreak of cattle plague, they had been sadly twitted by those of the medical profession for their want of skill in not being able to find a cure for the fatal malady, or give a proper account of its pathology. Such retrospective remarks as these might serve to show the very considerable development which had taken place in the teaching resources of the veterinary schools of this country within the past forty years, and from this might be formed a pretty correct estimate of the advancement of the profession as a body. If, he went on to say, they had not been advancing by gigantic strides, their onward march had been steady, while they might even say the pace had been creditable, considering the obstacles which had had to be overcome. In this country veterinary science owed nothing to the fostering care of Government; neither could it be said that the public had encouraged it. There was, however, one body to which would be conceded, by all except the bigoted and the uninformed, credit for its endeavours to promote the interests of veterinary science. At a time when the condition of even members of the profession might be described as one of apathy, the Highland and Agricultural Society, by the institution of examinations, the appointment of lecturers, and the bestowal of prizes, gave to the pursuit of veterinary knowledge an impetus to which might be traced not a little of the advancement which had taken place, more particularly in this part of the kingdom. Now that the members of the body which claimed to have received from Government the monoply of looking after the interests of the profession seemed to be awakening from their torpor, they found some of them devoting their energies to vilifying the Highland Society, and casting ridicule upon those members of the profession who practised on the strength of the degree conferred by that body. Upon all that, however, the man who was conscious of the soundness of his own knowledge could afford to smile and even return contempt for contempt. But when it was sought by legislation to deprive these members of the profession of their right to fill offices for which they possessed qualifications equal to any, it was time to resist to the utmost the unjust imposition—he referred to the clause in the Contagious Diseases (Animals) Bill which sought to enact that holders of the veterinary certificate from the Highland Society should be ineligible for the office of veterinary inspector. In conclusion he would express the opinion that if each member who had spare time and energy to devote to stirring up fruitless dissensions would, instead, spend that time and energy in an unobtrusive, but earnest endeavour to add a little to their alas! too limited store of knowledge, he would then to the best of his means be advancing the interests of the profession.

A discussion on the Contagious Diseases (Animals) Bill having been opened by Mr. Robertson, Kelso, Mr. Connacher, Perth, mentioned that in his position as inspector he was cognisant of

the existence of pleuro-pneumonia in eleven byres in the Fair City, which he could trace to the importation of Irish cows. He, therefore, advocated the adoption of a more rigid inspection of Irish cattle before they were sent to England or Scotland.

Mr. Wauch, Stirling, explained that he had officially attended the Falkirk Tryst during the last eight or nine years, and had never found a case of pleuro-pneumonia among the cattle, which are mostly Irish.

Mr. Connacher pointed out that the disease took a time to develop itself, and that cattle suffering from pleuro-pneumonia which could be detected were not likely to be taken into the market.

Mr. Reid, Leith, as the result of eight years' experience there, also considered Irish cattle a fruitful source of disease, and looked upon the existing system of inspection as trivial.

Mr. Balfour, Kircaldy, corroborated the remarks of Mr. Connacher.

Principal Walley, after expressing concurrence in what the President had said with reference to the Highland Society, remarked that veterinary surgeons knew practically that there was no disease in Norway, Sweden, or Denmark. He did not see, therefore, why the Privy Council should not have retained to itself the power which they had done in the case of the Channel Islands, of allowing the importation of stock from such countries as he had mentioned, so long as it was proved that no disease existed in them. (Hear, hear.) He knew that he might be met by the statement that foot-and-mouth disease had been imported from Denmark; but it was remarkable that he had never seen the least sign of it amongst cattle arriving from that country. He agreed with the statements of Mr. Reid, that many of the outbreaks of disease in Leith could be traced to the importation of Irish cattle.

At the close of the discussion the thanks of the meeting were accorded to Professor Baird for presiding.

J. McFadyean, *Secretary*.

Veterinary Jurisprudence

DISEASED CATTLE CASE.—PLEURO-PNEUMONIA.

Peterborough Petty Sessions, June 19,

Before C. I. Strong. Esq. (Chairman).

Chas. Featherstone, cattle dealer, of Bourne, was charged with driving a cow which was affected with pleuro-pneumonia, on the highway at Peterborough, on the 8th instant.

Mr. Atter, of Stamford, defended.

Mr. G. F. D. Gaches appeared for his father, the town clerk, to prosecute, and draw their worships' attention to the

statute bearing on the case. He contended that defendant was thoroughly acquainted with the law and the diseases of animals, and consequently knew that to remove the cow was illegal.

William Carter, the drover, said he came out of the "Crown" yard into "Crown" Lane with two cows and a steer, and drove them to the Great Northern Station. He saw nothing the matter with them, excepting they were in a low state by old age.

Mr. Richard Mackinder said in consequence of what he heard on the 18th inst., he went to the "Crown" yard and saw three beasts all ill. One, a cow, was suffering from pleuro-pneumonia in an advanced stage. He told those in charge of the animals were not to be removed until he obtained a proper notice. He went home for a notice, and when he returned the cattle were gone. He went to the Great Northern Station, found the animals there, and had them removed back again to the "Crown." One subsequently died, and he made a *post-mortem* examination, and found pleuro-pneumonia in a very advanced stage. He knew Mr. Featherstone to be a man of large experience, and one who dealt largely. He dealt much in this kind of animal. Mr. Atter objected to this assertion.

Cross-examined by Mr. Atter. The animal would be likely to give the disease to others, but it was not a certainty. He was not mistaken as to the disease being pleuro-pneumonia. There were no other animals near. One of the other two animals had died, not of pleuro-pneumonia, but other diseases. He expected the third animal would die during the day.

Joseph Mackinder, son of the last witness, said he went to the "Crown" Inn with his father, and found one cow suffering from pleuro-pneumonia in a very advanced stage. He should say Mr. Featherstone would know if the cow were suffering from such a disease.

By Mr. Atter: His father told him to go and look at the animal, and he gave him his opinion as to what disease it was; but he did not tell him which animal it was.

This concluded the case for the prosecution, and Mr. Atter opened the case for the defence. He said the cow came from a Mr. Hill's, of Oundle, and was what is known as a "waster," and to have such in his possession, and to sell such, defendant had not committed an offence against the Act of Parliament. The cow had left a herd of cattle, which were now perfectly healthy, and it was not driven through the streets in the night-time, but in the day-time, and was sold in public.

Joseph Hill, farmer, of Cotterstock, said he purchased eight or ten cows from a gentleman at Raunds. They were kept in sheds and fields from the time he bought them. The cow never did do well. He consulted a veterinary surgeon, who advised him to turn her out to grass, and take her milk away. No animals which have been in contact with the cow had suffered from any kind of disease. A person named Russell

brought the cow to Peterborough, and he told witness he sold her at Carter's at the "Royal Oak."

By Mr. Gaches: Russell did not tell him that the cow was refused admission to the market. He (witness) sold it because he though she would do no good. The cow brought him £5. In April he thought he had better call in a veterinary surgeon.

Mr. Leet, cattle dealer, Islip, said he bought the cow of Russell. He sold two cows to Mr. Featherstone, one of which he bought of Russell. He could not see that the cow was suffering from pleuro-pnemonia, but she looked thin.

Cross-examined by Mr. Gaches: He bought the cow because he thought she was worth the money, and he made a half-sovereign by the transaction. He had no commission from Mr. Featherstone to buy the cow. He sold her just outside the market, and he never intended to take her in. He intended to send her to London.

By the Bench: He knew cattle when suffering from pleuro-pneumonia, but the cow did not seem to be suffering from that disease: if she had, he should not have bought her.

Mr. John Vincent Ayres, veterinary surgeon, Oundle, said on the 19th April he was called in to inspect Mr. Hill's cow, He found her suffering from no contagious disease, but disease of the lungs. He ordered her to remain with the others, and be treated as the others. Had he known her to be contagiously affected, he should not have given the order he did.

Cross-examined by Mr. Gaches: He was a farrier. He had not seen the cow since the 19th April. He sounded the cow and found her to be suffering from disease of the lungs.

By the Bench: Pleuro-pneumonia and lung disease were unlike in the first stages, but more alike as the disease progressed.

Mr. R. Mackinder, recalled, said he had been sent by one of the directors of the market, and several people had noticed the condition of the animal.

The magistrates retired, and after some considerable deliberation came into court.

The Chairman said they must convict defendant.

Mr. Featherstone: Your honour, I did not know it was diseased, and I consider myself a persecuted man.—£2 5s. penalty and £2 15s. costs.—*Peterborough Standard.*

OBITUARY.

Mr. David Campbell, M.R.C.V.S., late Dundee. His diploma bears date, February 18, 1834.

Mr. Matthew Glurnie, M.R.C.V.S., Campmuir, Perthshire. His diploma dated April, 1843.

Mr. John Yates, M.R.C.V.S., late Barrow-in-Furness, Lancashire. His diploma bears date April 22, 1870.

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Communications and Cases.

DESTRUCTIVE DISEASES AFFECTING DEER AND SHEEP.

By T. W. Mayer, M.R.C.V.S., Professor of Veterinary Medicine at the Agricultural College, Cirencester.

To the Editor of the Veterinarian.

The attention of your readers having been directed to a paragraph which has been duly circulated in the papers, and commented upon by the *Standard* of the 12th of July, in reference to an outbreak of disease amongst the herd of deer and flock of sheep at Cassiobury, the seat of the Earl of Essex, render it desirable that the circumstances (so far as I am acquainted with them) should be placed on record.

On the 25th of May, 1878, the Earl of Essex stated that he would forward a deer and ewe to the Agricultural College Hospital for *post-mortem* examination in order "to ascertain the cause of death," giving at the same time the following statement of the malady affecting the deer:—"The disease showed itself last May, with the following symptoms: first, the animal tossing about its head, turning it towards its rump, apparently to rub it. After a day or two it takes to butting furiously at anything which comes in its way. Against a tree or post, it will stand on its hind legs, and often attack a large branch of a tree within reach; will also attack furiously its own kind, old deer or fawns, and once or twice persons who were walking. After a few days the loins seem

to fail. The animals now waddle about, and can scarcely walk; in a week or so after this they are found dead, very frequently near the river. Both sexes and all ages are attacked. Up to this time I have lost about eighty. A similar disease existed here some sixty or seventy years ago, when more than two hundred died. The herd at that time was much larger than it is now. Lord Clarendon's park is only separated from mine by a lane, but his deer have not shown any sign of the disease, nor have Lord Ebury's, three miles from here."

It is a curious coincidence, his Lordship proceeds to remark, "that at the same time last year several of my young horned stirks were attacked in a somewhat similar manner, tearing about the park and roaring most wildly and running at anything or anybody. The veterinary surgeon here called it apoplexy and treated it as such. Blisters, bleeding, &c., were had recourse to; but I lost three or four."

"This year I have also had a great mortality amongst my ewes, which my shepherd cannot account for, wasting rapidly away and dying. The grass was very abundant last year, as indeed it is this, and, to use a favourite term, goes through them rapidly."

Post-mortem appearances.—This *post-mortem* of the deer was made ninety-six hours after death, but the body was not in the same state of decomposition as was that of the ewe. The eyes were sunken and muddy, as if there had been some pressure on the brain. The *larynx* and *pharynx* congested, as also the absorbent glands of the neck.

Thorax.—Lungs congested, containing a large quantity of black blood. The trachea and bronchial tubes filled with frothy mucus and the lining membrane much congested. The pericardium empty; but the auricles and ventricles of the heart contained an immense accumulation of black blood.

Abdomen.—Spleen congested in patches, liver enlarged and indurated, with an hydatid attached to its surface. The rumen contained a large mass of undigested food; the fourth stomach was comparatively empty, but contained some small portions of what looked like grit or dirt; its lining membrane was congested and partially ulcerated in places. The intestines contained hardened fæces, and the lining membrane of the small as well as that of the large bowels was inflamed. The kidneys were congested and the bladder distended with urine. On the head being opened the vessels of the brain and its membranes exhibited much turgescence, especially at the base of the skull, and there was also a clot of blood in the centre of the brain.

From these appearances it was evident that in the first stage of the disease there was derangement of the digestive organs, particularly the fourth stomach, and liver. Secondly, cerebral disturbance, terminating in congestion of the brain, heart and lungs, or sanguineous apoplexy.

It is probable that some peculiar influences, yet to be ascertained, may have been the exciting causes of this disease, promoted by an unusually mild but wet winter, and the luxuriant state of vegetation. Possibly the condition of the park itself may require an investigation.

With regard to the ewes, it was stated "that the flock lambed well, and at this period appeared healthy. They were then put upon white turnips for a time, and afterwards (as in previous years) were turned into the park.

"The disease," his Lordship said, "has not occurred before this year. All are attacked alike, tegs and ewes, young and old, strong and weak."

The *symptoms* were thus described—"First weakness appears, and the animals lie down; then a bulky and watery swelling makes its appearance under the jaws and round the neck. The animals evince great thirst, and show a preference for marshy places; feeding and rumination then cease. The visible mucous membranes become white, and the extremities cold. In a few cases an offensive discharge makes its appearance, the breath is strongly tainted; fæces and urine are healthy as far as casual observation goes. The animals pine away gradually and die. The coat staring and wool coming off."

Post-mortem appearances about thirty-one hours after death. On removing the skin, the connecting tissues were found to be either filled with gas or serous fluid, the entire body being in a great state of decomposition. The blood was not coagulated, but disorganised, and in a state of fermentation. The *right* ventricle of the heart was filled with a *red* fluid, of the consistence of clay and water, and there was a very small *black* clot in the ventricle.

The pericardium contained a quantity of fluid. The lungs were very much broken down, and patched with gangrenous deposits. On opening the abdomen a *number* of hydatids (*Tænia echinococcus*) were found attached to the diaphragm, liver, stomach and mesentery. The liver was wasted, completely broken down in structure, of a light clay colour, as were also the kidneys and spleen. On opening the head a large quantity of fluid made its escape. The brain was much softened and bloodless. The mucous membranes of the head and nasal chambers was in a state of

gangrene. Besides the existence of hydatids, the *Strongylus filicollis* was found in various parts of the intestinal tube.

It is quite evident, from these appearances, that the sheep are suffering from disease affecting the lymphatic system, and that the nutritious parts of the food have not been taken into the circulation; but have been destroyed by some specific agency.

It was therefore deemed advisable to obtain some of the blood from a living animal, which, having been duly forwarded from Cassiobury, was sent by me to the Royal Veterinary College. I was anxious to have this disease more strictly investigated than under the circumstances I could effect, and as such I requested Lord Essex to send a live sheep to the College, which was kindly done.

[The condition of the blood forwarded by Mr. Mayer distinctly proved the anæmiated state of the animal from which it had been taken. It was composed chiefly of serum, which was remarkable for the small quantity of albumen it contained. The crassamentum was also insignificant in quantity, and singularly deficient in both red and white cells.

The ewe, alluded to by Mr. Mayer, as having been sent to the College by Lord Essex, was found on arrival to be in an extreme state of emaciation, associated with general anasarca and serous effusions into the cavities—abdomen, and thorax. Her wasted condition, bloodless state of mucous membrane, feeble pulse, pendulous abdomen, imperfect respiration, &c., at once showed that for a long period an abnormal drain on the system had been going on, as in ordinary cases of the disease known as rot. There was, however, no diarrhœa nor irregular condition of the bowels present—a fact which led us to express an opinion that the ewe was suffering from the presence of a large number of nematodes —*Strongylus contortus*—in the abomasum or true stomach. Her death, which took place shortly after her arrival, enabled us to make a searching examination, when the opinion given received full confirmation—myriads of the parasites alluded to being found in the stomach. With the exception of some slight structural changes in a small portion of the liver, the result apparently of the *Distoma hepaticum*, and a few condensed patches in the lungs, all the organs of the body were free from structural disease.

History.—This ewe, as well as the one sent to Cirencester Agricultural College, belonged to a flock which originally numbered 150. They were bought in September, 1876, and

lambed in the spring of 1877, bringing forth about 200 lambs. The lambs were weaned in July following, and were fed on grass in the park until October, when they were folded on white turnips, and had, in addition, chaff and oats during the winter. In the month of April, 1878, they returned to grass. The lambs have done well throughout, and are now fit for the butcher.

In September, 1877, 50 ewes were drafted from the 150, and put with 100 sheep, which were being fattened on swedes, corn, and chaff. They also have all gone on satisfactorily, and are at the present time in a healthy condition.

The 100 ewes were again put to the tup in September, 1877, and brought forth about 100 lambs in the spring of '78. During the winter they had the run of the park up to March, and were supplied with oats, chaff, and swedes; after lambing they were fed with white turnips. A short time before lambing they were observed to be doing badly and losing condition gradually, and since then very many of them have succumbed to the disease. Their lambs have also suffered in a like manner, and about 30 have died out of the 100.

It is further worthy of note that 50 young ewes, which were bred on the estate in 1875, were mixed with the 100 ewes in September, 1877, for breeding purposes. They produced about 50 lambs in March of the present year, and these with their dams are all more or less affected. Out of 50 ewes upwards of 20 have died, and several of the lambs.

These facts would seem to show that it was during the autumn and winter of 1877-8 that the parasites entered the system, but the circumstances leading thereto are by no means clearly defined.

The *Strongylus contortus* is one of the nematodes of whose natural history very much has to be learned.

On the cause of the fatality being communicated to the Earl of Essex, his lordship kindly forwarded four more of the diseased ewes to the College for experimental treatment. One of these has died, and the *post-mortem* examination, while confirming the nature of the affection, revealed the further fact that large numbers of the parasites had been killed by the means employed, and had passed from the stomach into the intestinal canal.

We have now merely to add that the treatment will be continued, and its details, with the result, be communicated to our readers in due course.—Eds.]

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 435.)

The Cinchonal Alliance now to be described is one of the most interesting as well as the most useful of all the groups into which plants have been divided. It may be diagnosed as follows:

CINCHONALES.—The Cinchonal Alliance.

Epigynous exogens with dichlamydeous monopetalous flowers and a minute embryo lying in a large quantity of albumen.

The following notes on this alliance, by Dr. Lindley, are quoted for their great interest, as showing the principles upon which plants are grouped:

"This alliance is known from Campanals and Myrtals by its large quantity of albumen and small embryo, from Cactals, Grossals, and Umbellals, by its monopetalous corolla, from Asarals by its dichlamydeous flowers. The orders of it are closely allied, the three last in the following enumeration being indeed separated by no very strong characters. Cranberries and Columelliads, although not usually brought up to this point, are, nevertheless, hardly separable from the alliance; the former have a lateral tendency to Ericals.

"Cinchonals are distinguishable from Umbellals by little except their monopetalous corolla, especially if Caprifoils and Cornels are compared, and therefore must participate in the undoubted affinity of the latter alliance to Ranals; a circumstance not to be lightly esteemed in mapping out the position which the various groups of the natural system occupy with respect to each other.

"A very strong approach is shown to the diclinous subclass, on the part of Caprifoils, among which viburnum, minus a corolla, and with an amentaceous inflorescence, would almost be a Garryad. Indeed, even a tendency to unisexuality occurs among Caprifoils, when, as in viburnum, &c., some of all the flowers become neuter or male.

"And here again we have exactly the same tendency as manifests itself in so many genera of Umbellifers, which, as in Heracleum, &c., form radiant male or neuter flowers."*

From these remarks it will be seen that the cementation of parts, as seen in the monopetalous corolla of the whole

* 'The Vegetable Kingdom,' p. 756.

of the plants of the alliance, is an important character, separating these from a wide range of other plants.

There are five Natural Orders :

1. VACCIMACEÆ.—*Cranberries.*
2. COLUMELIACEÆ.—*Columeliads.*
3. CINCHONACEÆ.—*Cinchonads.*
4. CAPRIFOLIACEÆ.—*Caprifoils.*
5. GALIACEÆ.—*Stellates.*

Of these we shall, on the present occasion, describe the Cranberries and Cinchoniads.

The *Vacciniaceæ* are well represented by our native cranberry, *Vaccinium oxycoccus*, and the bilberry, *V. myrtillus.*

The cranberry is a well-known bog plant, eagerly sought after by the botanist for the beauty of its flowers, and by the tourist for its agreeable sub-acid scarlet berries. The fruit of this plant is very agreeable and somewhat in size, shape, and properties, like that of the red currant. It was formerly much used in England, and so plentiful that we are told that "during the latter part of the last century cranberries from Lincolnshire and the north-west corner of Norfolk were sold in the streets of Norwich by cartloads," but their native haunts are lessening year by year, as, for example, miles of Cheshire bogs are converted into potato gardens, and in the smaller areas left to this agreeable native fruit only enough is found to satisfy the thirst of the exploring botanist.

Cranberries are much used in America for puddings, tarts, sauces, and preserves. Mr. R. Thompson thus describes the American species, which we quote in the hope of exciting home growers to extend its cultivation with us.

"The larger fruited or American cranberry, *O. macrocarpus*, which is also of slender creeping habit, and has elliptic obtuse, nearly flat leaves, bears spherical berries, larger and of a brighter red than those of the common sort; they ripen in October and successionally, often remaining on the plant throughout the winter. It is found from Canada to Virginia, in bogs, principally on a sandy soil. The berries are collected in large quantities and form an article of export to Britain and other parts of Europe. The American cranberry can be cultivated in England, and was so very successfully by Sir Joseph Banks and others. Downing, in his 'Fruits and Fruit Trees of America,' states that 'in some parts of New England low and coarse meadows of no value have been drained and turned to very profitable account by planting them with this fruit. The average produce is from eighty to one hundred bushels of cranberries (per acre), worth at least one dollar a bushel.' As a large

quantity can be obtained from a small space, and at little expense, the American cranberry might be advantageously cultivated, for private use at least, in this country, where, by picking the berries only as they became perfectly ripe, and carefully rejecting such as were but partially so, a produce of more uniform and better quality would be insured."*

It seems a pity that these plants should not be cultivated; there are plenty of spots in the country well adapted for the purpose which now yield but little else. Any boggy place might be planted with cranberries, with a certainty that they would grow, and there is no doubt the American form would do well with us.

The Bilberry-Whortleberry, or worts of the rustic, is the fruit of the *Vaccinium myrtillus*; it is abundant in woods in most parts of England. Mrs. Lankester says of it—

"This well-known shrub is also known as the Bleaberry, and is much admired for its fresh bright foliage, and its urn-shaped flowers of pinkish wax-like appearance. The berries which follow them are of a bluish-black colour, covered with a mealy bloom. They are used much in the same manner as the fruit of the other species of vaccinium in tarts or jam, or made into jelly. In Devonshire they are eaten with clotted cream. In Poland they are mixed with wild strawberries, and eaten with new milk as a great delicacy. Their juice has been employed to stain paper or linen purple. Many kinds of game live upon the berries, but the grouse is especially found of them.†

We have partaken of these berries with great pleasure in most of the counties of England; they are not, however, as a rule, partial to the chalks or the oolites, and hence in the oolitic district of Gloucestershire the woods are free from them, and so on the light soils in Dorset.

The different sands and sandstones in upland districts seem to be best adapted for this plant, and on these, in wild wooded districts, the borders of the paths will especially be given to whortleberries.

The Cinchoniaceæ are usually tall trees, but there are not a few shrubby, and even herbaceous plants. It is a very large and important order, containing 269 genera and as many as 2500 species, amongst which the cinchona from different species of which Peruvian bark is derived. This, which for a long time was used in the shape of powder, tincture, and other preparations, has undergone such rigid examination that its chemical composition has been minutely

* 'Treasury of Botany,' p. 831-2.
† 'English Botany,' vol. vi, p. 25.

examined. These have amongst them the alkaloid called quinine, which would appear to be the active principle of the cinchona bark.

This, which is now an important object of commerce, is extensively used all over the world as a febrifuge in intermittent and other fevers. During our medical pupilage we recollect the anxiety which was expressed by hundreds of patients for quinine pills, and it was really astonishing how soon a cure of ague was effected by this chemical.

It is generally employed in the shape of sulphate or disulphate of quinine, which sometimes commands a great price; still, it is considered so important that both the army and navy are liberally supplied with it, and especially when on foreign service. So important, indeed, is cinchona that much has been written upon its cultivation, commerce, &c. The best sorts come from Peru, and hence the name of Peruvian bark. Ipecacuanha and catechu are members of the order; they are both active medicines, but next to cinchona the most useful plant of the order is that of coffee. The value of Peruvian bark may be judged from the fact that any plant supposed to possess even a modification of its tonic and febrifuge properties is highly extolled; thus, the bark of the willow had been used for the same purposes and that of the *Salix Russelli*, and which yields salicine has been largely used in cases in which quinine has been employed. It has not been much used in veterinary practice, probably on account of its cost, but it should be stated that the coloured sulphate, that is, the drug not rendered colourless, is much cheaper. Professor Tuson, in his valuable 'Veterinary Pharmacopœia' gives a good form for making Quiniæ Sulphas, and he has the following on its

Actions and uses.—Tonic and anti-periodic in intermittent and other fevers; in loss of appetite and weak digestion depending on debility; in acute rheumatism, chorea in dogs, and constitutional or deep-seated ophthalmia in horses; during convalescence from acute complaints; also during the exhaustion which follows influenza and other diseases.—*Doses*—Horse, 22 to 40 grains; Cattle, 20 to 60 grains; Sheep, 5 to 10 grains; Pig, 5 to 10 grains; Dog, 1 to 5 grains.

These are large doses, which would render the medicine very expensive, especially if, as we have known, the medicine be a guinea an ounce. It is not much wonder then that while so much has been written of the effects of quinine on the human subject so little is known, for so little has been tried, of its effects upon the lower animals.

LITHOTOMY IN THE HORSE.

By R. Spooner Hart, M.R.C.V.S., Calcutta.

We have the permission of the Surgeon General to publish the following interesting notes of a case of lithotomy in the horse, extracted from the Annual Report of the 2nd Central India Horse, by Surgeon A. Barclay.

"As a surgical curiosity I may mention a lithotomy operation which I performed upon a horse belonging to the regiment. Upon casually visiting the horse hospital, the Salontree pointed out a horse, describing its symptoms, which so exactly coincided with those usually exhibited by the human subject suffering from stone in the bladder, that I suggested the possibility of the same cause for those of the horse. By introducing his hand into the rectum the man felt the stone, thus verified my suspicion. We rudely dissected the next pony which died to find out the position and relations of the bladder; and having myself felt the stone, by the same method, I determined to attempt its extraction. Chloroform was given, and having introduced a long flexible gum elastic catheter into the bladder, I cut down upon it by a longitudinal incision, commencing about $2\frac{1}{2}$ or 3 inches below the anus, and extending down the raphé about 3 or $3\frac{1}{2}$ inches, keeping always well in the middle line, as, being ignorant of the course of the great vessels, I thought the least risk would be run by adhering strictly to the middle line. I did not actually cut the neck of the bladder at first, but only opened the urethra immediately anterior to it. The urethra I found very dilatable, and could with ease introduce one of the largest pair of forceps (from a case of lithotomy instruments adapted for the human subject). These, however, were too short in the limbs, and the gape was insufficient to allow of a good hold upon so large a stone. By introducing my left hand into the rectum, and urging the stone towards the incision, I managed to catch it in the forceps; but upon traction the stone slipped and became again free in the bladder. The horse too was not kept completely under chloroform, and upon attempting traction, strong spasmodic contractions of the tissues around the incision reduced the already small opening at my disposal. I was therefore obliged to notch the neck of the bladder, which I did obliquely downwards and outwards, as in cutting through the prostate in the human subject in the lateral operation. Still the opening was too small; but the stone

fortunately broke in an attempt at extracting it, and the pieces were removed then without any difficulty with a spoon. No vessel of any size was wounded, so no ligatures were required. No sutures were applied to the external wound: it was simply covered with a piece of lint dipped in carbolic oil in order to keep off flies. Its subsequeut history was was in every respect analogous to that of the human subject after lithotomy. At first urine was passed wholly through the incision: gradually it began to pass also through the urethra, until ultimately it did so wholly through the natural passage, when the external wound completely healed up. The horse is now perfectly well and in work again. The stone weighed 2 oz. and 30 grs.; it was exceedingly rough externally, being covered with crystallic spicules, which caused a good deal of hæmorrhage into the bladder while the stone was there. The horse, too, must have suffered much pain from it."

TORSION OF THE UTERUS.

By R. E. Hoile, M.R.C.V.S., Lympne, Kent.

On the morning of June 28th my attention was called to a cow noticed to have been very uneasy all the previous day, which, together with the fact of her term having expired, led the owner to anticipate some trouble in her delivery. On introducing my hand into the vagina, I found it twisted from right to left in a downward direction, rendering it very difficult for the passage of my hand into the os uteri, where I could feel one foot of the fœtus. Considering the parts not in a sufficiently relaxed condition I left two doses of ergot, to be given in a pint of ale, at intervals of three hours, the effects of which were satisfactorily evident towards evening.

I now thought it time for further action, and decided to attempt reduction of the twist by version. The animal was accordingly turned completely over, from right to left, in the direction of the twist, my arm being retained in the passage when I had great satisfaction in finding that the rugæ had entirely disappeared, and the fœtus, a large one, and dead, quite ready to come away.

But here another difficulty presented itself, relative to the position of the head of the calf, the lower jaw being uppermost, leading one to imagine it to be on its back; but on commencing to apply traction, with my hand in the passage to guide it, the head was soon righted and delivery effected with

comparative ease. As the cow showed signsof exhaustion, I administered a restorative, combined with an aperient (no action of the bowels having taken place during the day). In a few days she was restored to perfect health.

VETERINARY SURGERY AS PERFORMED BY UNSKILLED MEN.

By R. H. Dyer, M:R.C.V.S., Limerick.

It has often occurred to me that some notice should be taken of this question, viz., permission allowed to unskilled men for the performance of surgical operations upon our domesticated animals; more especially I would single out the castration of horses. I believe that prior to the year 1815 barbers were in the habit of bleeding human beings, and extracting their teeth. Doubtless those men were fully as capable of abstracting blood and drawing teeth as well as certificated surgeons of the present day; but the law put a stop to such practices, and very properly so. Since the period above quoted, now sixty-three years ago, the veterinary profession has been steadily, though slowly, progressing, and nothing has been done by the legislature to obstruct or prevent unskilled men from perfroming surgical operations.

Anti-vivisectionists have turned up to prevent unnecessary operations, and the Society for the Prevention of Cruelty to Animals has done infinite service in the suppression of cruelties; but no step has been taken to prevent unskilled men from prosecuting their calling as operating surgeons. I am free to confess that thousands of men have from time immemorial been in the habit of performing the operation of orchotomy with much success; but this fact does not ignore the idea that many of them undertake an operation which they are incapable of completing or bringing to a successful issue when things go wrong. I argue that if a man undertakes to perform the operation he should be able to complete it under any and under all circumstances, or he should be prohibited from attempting it. We all know that the "clam" is a simple mode of rendering an animal sterile, and one easily learned. We know also that champignon, or schirrous cord sometimes follows this method. It is so simple that, unfortunately, ignorant men are engaged in it at stated seasons, and in consequence of their small charges they are largely employed. This may be urged as an excuse, but it does not do away with the fact, that such men are both unskilled and

unable to complete the operation, or to put things right if they go wrong. Many such cases having fallen under my notice caused me to reflect upon it, and hence these remarks. Last week I had a colt brought to me, with a scirrhous cord of the magnitude of a pint porter bottle. The colt was operated upon a fortnight before I saw him.

It becomes a question, if such things cannot be dealt with by the profession, whether the Society for the Prevention of Cruelty to Animals cannot do so. If a sore is found upon the back, withers, or breast of a harness horse, and that horse is worked, the driver or owner is fined for it.

If this be cruelty it does not require a very great stretch of the imagination to make out a case in the instance of castration. The operation of castration is attended with a certain amount of pain without doubt, and is permissible; but if that operation is performed by an unskilled man, and things go wrong, pain is an attendant as well as a consequence upon such want of skill. It cannot be denied that our profession has suffered grievously from the acts of charlatans, and I think it is high time that some measures be adopted for placing us in a proper position.

REMOVAL OF A POLYPUS FROM THE INFERIOR PART OF THE RECTUM OF A DOG.

By Samuel Gill, M.R.C.V.S., Hastings.

May 28th, I was consulted respecting a favourite dog in this town suffering from a large polypus at the lower part of the rectum. After a careful examination I determined on an operation which was done the following morning. First I introduced a very fine trocar to let out the fluid, leaving the canula in for a few seconds. I next proceeded (after the removal of the canula) to pass a strong silk ligature round the neck or stalk tied tightly, thus cutting off the circulation. In a few days the growth dropped off, caustic being applied to remove any portion of the stalk remaining.

June 21st.—The animal was sent home cured. The parts healed up, and the mark not perceptible.

July 3rd.—A letter from the owner has the following:—"I am sure you have treated my dog ably and kindly." This case was placed in the first instance in the hands of an unqualified man assuming the title of "veterinary surgeon," but he was (I am glad to add) afraid to take the case in hand.

Pathological Contributions.

CATTLE PLAGUE.

This disease does not appear to diminish in the neighbourhood of Smyrna, notwithstanding the measures taken to arrest its progress, and according to the latest news from there, not less than 10,000 head of cattle have been attacked by this disease in that province alone. It also exists in other localities in Turkey, both European and Asiatic, as well as in Russia in the governments of Bessarabia, Volhynia and Podolia. In Italy, the disease prevails in the province of Naples, but the whole of the Austro-Hungarian Empire is free with the exception of the Cattaro district.

PLEURO-PNEUMONIA.

Pleuro-pneumonia has been reported during June in the following places :—

Bedford, Chester, Cumberland, Derby, Dorset, Durham, Essex, Huntingdon, Kent, Lancaster, Leicester, Lincoln (Lindsey), Middlesex, Norfolk, Northampton, Northumberland, Notts, Rutland, Salop, Somerset, Stafford, Suffolk, Surrey, Sussex, Warwick, Worcester, York (East Riding, North Riding, and West Riding), the Metropolis, Anglesey, Denbigh, Merioneth, Aberdeen, Berwick, Edinburgh, Fife, Forfar, Kincardine, Lanark, Linlithgow, Perth, Roxburgh, Wigtown.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of June, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . .	Foot-and-Mouth	...	5	...	...	5	Slaughtered under the instructions of the Privy Council.	425	1050	...	30	1505	Slaughtered under the instructions of the Privy Council.
Antwerp . .	„ . .	Sheep-scab . .	...	22	...	...	22	Ditto	...	1434	...	...	1434	Ditto
Bremen . . .	. .	Foot-and-Mouth	...	8	...	...	8	Ditto	...	1777	...	...	1777	Ditto
Rotterdam . .	„ . .	„	4	34	...	...	38	Ditto	889	6697	...	708	8294	Ditto
Total Diseased Animals .		Foot-and-mouth	4	47	...	...	51	Total Healthy Animals .	1314	10958	...	738	13010	
		Sheep-scab . .	...	22	...	...	22							
		Total . .	4	69	...	...	73							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of June, 1878.

Veterinary Department, Privy Council Office,
July 11th, 1878.

FOOT-AND-MOUTH DISEASE.

Foot-and-mouth disease is reported to have existed during May in the following places:

Bucks, Derby, Durham, Hants, Herts, Kent, Northampton, Northumberland, Stafford, Wilts, and York (West Riding).

Facts and Observations.

Export of German Horses.—Owing to the conclusion of peace, the German *Official Gazette* of July 22nd publishes an Imperial order, countersigned by Count Stolberg, rescinding from that date the prohibition to export horses from Cermany.

Statistics of Horses.—According to the *Journal des Débats,* the number of horses in the principal countries of Europe is as follows:—Russia, 21,570,000; Germany, 3,352,000; Great Britain, 2,255,000; Hungary, 2,179,000; Austria, 1, 367,000; and Turkey, 1,000,000. According to the same authority there are 9,504,000 horses in the United States; 4,000,000 in the Argentine Republic; 2,624,000 in Canada; and 1,600,000 in Uarguay.

Parkes'—Museum of Hygiene.—This museum has been established at University College, London, as a memorial to to the late Dr. Parkes, F.R.S., Professor of Hygiene at the Army Medical School, Netley, and Emeritus Professor of Clinical Medicine at University College. A large room, comprising 3500 square feet of area, and an adjacent room which is being fitted up as a library, have been allotted to the museum, which it is intended to make a centre for information in all matters relating to hygiene. The contributions in money already amount to more than £800, and contributions in kind are abundantly promised.—*Globe.*

On the Poisonous Action of Carbolic Acid.—Professor Kuster has recently called attention to the injurious results sometimes attending the administration of this valuable drug. From experiments on dogs he finds the action of a poisonous dose to consist mainly in paralysis of the nervous centres. In small doses it is readily eliminated by the kidneys. Sulphate of soda has been proposed as an antidote, but Professor Kuster doubts whether the action of this drug is sufficiently rapid.—*Chemist and Druggist.*

THE VETERINARIAN, AUGUST 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE CATTLE DISEASES BILL.

AFTER repeated and prolonged discussion, the House of Commons has considerably modified the clauses of the Contagious Diseases (Animals) Bill. As the Bill left the House of Lords it provided for the slaughter of all imported stock at the port of landing, with certain arrangements for quarantine which were practically prohibitive so far as they related to ordinary store or dairy animals.

Early in the progress of the Bill the principle of slaughter was abandoned in the case of animals from America and Canada. Later on Spain, Portugal, Sweden, Norway, and Denmark were added to the list of excepted countries.

These concessions opened the question of the favoured nation clause, and the difficulty was met by restoring all countries to their original position in the Bill, and leaving to the Privy Council the discretionary power to exempt any of them from the operation of the slaughter clauses on satisfactory evidence being given that they are free from disease, and that their regulations against the introduction of disease from other countries are likely to be effective. Thus, as the Bill at this moment stands, slaughter will be the rule, and freedom of movement the exception.

In regard to the home provisions, with which the members of the veterinary profession are mainly concerned, the Bill remains much as it was originally. Certain minor changes in reference to infected districts were made in the Lords, but the original scheme has since been reverted to. Cattle plague is to be dealt with by the Privy Council exclusively.

Pleuro-pneumonia and foot-and-mouth disease will be in the hands of the local authorities as to the carrying into effect of the principal regulations which are to be compulsory; and the Privy Council reserves to itself further powers in respect of these diseases, and chiefly the power to

supersede the local authority in cases where the action is perfunctory, by appointing a commissioner to do the work at the cost of the district.

The great length and extremely discursive character of the discussions which have taken place prevent us from even attempting to give an epitome of them, but we have endeavoured to indicate for the information of our readers the results which have been arrived at up to the time of going to press. So far as we can discern a useful measure will be obtained, although it will not be exactly what was asked for by the stock owners of this country.

Extracts from British and Foreign Journals.

REPORT ON THE PATHOLOGICAL ANATOMY OF PLEURO-PNEUMONIA.

By Gerald F. Yeo,
Professor of Physiology in King's College, London.

(*Continued from p.* 469.)

To sum up the more important of the foregoing facts.

1. The lung parenchyma is usually the seat of various forms of irregularly arranged exudation, which give it a mottled look.

2. The interlobular spaces are always the seat of more or less exudation, which gives their sections the appearance of pale yellowish lines.

3. These pale lines subdivide the mottled surface into irregular small fields, and thus give the effect which is deemed so characteristic—*marbling*.

4. Three kinds of lesion must be distinguished in the lung.

(*a*) A more or less fluid exudation, making the parenchyma airless, though soft and translucent; this is diffused superficially, and wide-spread.

(*b*) A dense, opaque consolidation, which is generally the central focus of disease, and is wedge-shaped and defined.

(*c*) Black consolidation—hæmorrhagic infarction.

5. (*a*) or (*b*) May pass into consolidation of a dense kind, and ultimately may form tissue of cicatricial hardness.

5. (*c*) May produce gangrene, caseous degeneration, or fibrinous crumbling.

Broncho-vascular Lesion.—The part taken by the bronchial tubes in the chain of pathological processes seems to me so important, that I think it well to describe the changes found in them quite independently of those occurring in the lung tissue.

I find it convenient to associate the description of the vascular lesions with those of the air-passages, because, anatomically, they are very intimately connected, and because the morbid processes in the one help to explain the changes that take place in the other.

The bronchial tubes and blood-vessels have not, as far as I can ascertain, received very much attention. Those authors who describe the change commonly found in them consider it to be secondary to, or sympathetic of, the affections of the lung and pleura. Every examination I have made of diseased lungs appears to me to contradict this view, and, in spite of a prejudice in favour of the accepted views, the opinion has been gradually forced upon me that the pathological processes in the bronchi are of the greatest importance, and throw considerable light on the initial stages of the disease.

I have never examined a lung affected with pleuro-pneumonia in which there was not a well-marked and characteristic lesion of the bronchial tubes of the part most severely affected. No matter how small the focus of disease in the lung may be, or how little advanced a stage these morbid changes may have reached, there is always definite disease in the corresponding bronchus, extending some distance along the tube, but more or less localised to the diseased neighbourhood. In the small foci of consolidation, where the disease may be regarded as just beginning, the morbid process in the bronchus is generally more extended, and shows evidence of longer duration than the change in the lung parenchyma. This applies only to the part of the lung in a state of real consolidation, and not to that part which is translucent and extended over a large sub-pleural area. In the latter part the bronchial lesion is often wanting.

The cavity of the air-tubes of the opaque solid part is always plugged with a dense adherent mass of tough granular material. This completely occludes all the small bronchi, and extends into the neighbouring larger ones,

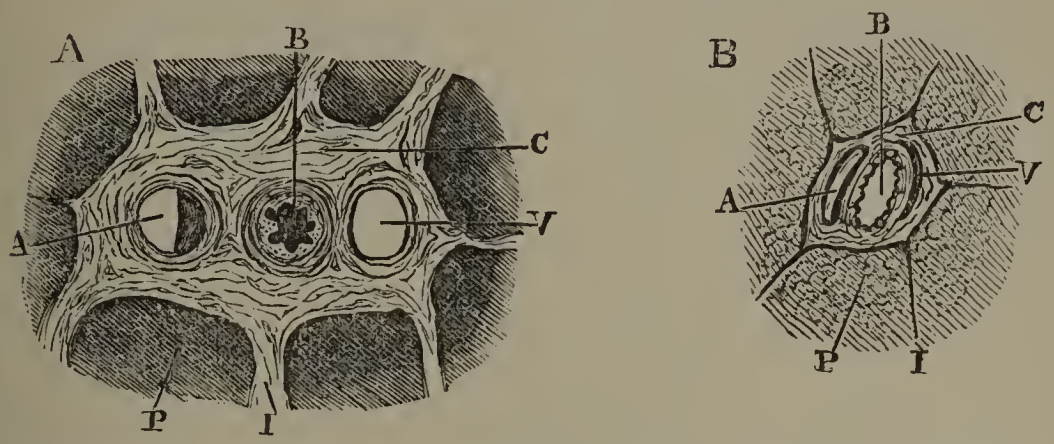
tapering to a fine point towards the less diseased tubes, where it is commonly surrounded with a quantity of tenacious frothy mucus, which occupies the bronchi for some distance towards the root of the lung. In passing from the larger healthy bronchi to those in the diseased focus, one meets with every stage of transition, from the ordinary frothy sputum of acute bronchitis to tenacious mucous or fibrinous masses which stick to the wall of the bronchus. Often a long branching cast of the air-tubes may be drawn out from them, here and there some of the branches breaking off and remaining impacted in the tube.

After the removal of the plug, the mucous membrane lining the bronchi is found to be rough and discoloured, and stripped of its epithelial lining. In the neighbouring tubes there is generally intense congestion of the membrane, with patches and streaks of ecchymosis scattered here and there over the surface. The longitudinal folds of the membrane are always greatly exaggerated, showing firm contraction of of the wall of the tube. Throughout the opaque part which shows the actual focus of disease the mucous membrane is of a dull-grey, or muddy-yellow colour, uneven and rugged on the surface.

Wherever the lining membrane of the bronchi is congested, they are found to have suffered more deeply. Their proper walls are thickened, their coats being separated one from the other by a kind of thick exudation. The wall of those air-tubes which contain the firm plugs are always enormously thick and dense. Even the small tubes, which are normally very thin, transparent, and yielding, become tough, opaque, and rigid canals, the wall often exceeding in diameter the lumen of the tube. Besides the thickening of the walls of the bronchi, their delicate connective sheath is implicated throughout the diseased part. This fine elastic substance becomes the seat of dense exudation, which changes the thin, yielding, cobweb-like sheath into a tough and rigid case (Fig. 2, A). This exudation appears to be very similar in character to that which fills the interlobular spaces, and it presents the same varieties and occupies the same relation to the tissue in both these situations. By means of the exudation, the peri-bronchial lymph-passages are rendered strikingly obvious as if they had been filled with some pale opaque injection mass. The course and relations of the larger channels may be thus easily followed with the naked eye. The clear transparent fluid exudation which occurs between the lobules in the more extended part of the lung lesion is not often met with about the bronchi. I am led to suppose from this

that the exudation is more dense from the first in this region, or that it becomes solid at an early date after its commencement.

FIG. 2.—*Transverse Section of Broncho-vascular System contrasting the Healthy with the Diseased State.*



A. In a state of advanced disease. A. Artery, partially excluded by a thrombus. B. Bronchus, contracted and plugged. V. Vein. C. Common broncho-vascular sheath, thickened by exudation. I. Interlobular tissue. P. Lobular parenchyma.
B. A corresponding broncho-vascular system in health.

The delicate fibrous tissue, which forms the bed of the lymphatics around the bronchus, seems to undergo a slow process of thickening; the elements of the tissue rapidly proliferating. In the very advanced stages, where the fibroid change has had time to occur in the lung, the tissue proliferation attains a maximum, and, as already mentioned, may cause the occlusion of tubes of considerable calibre.

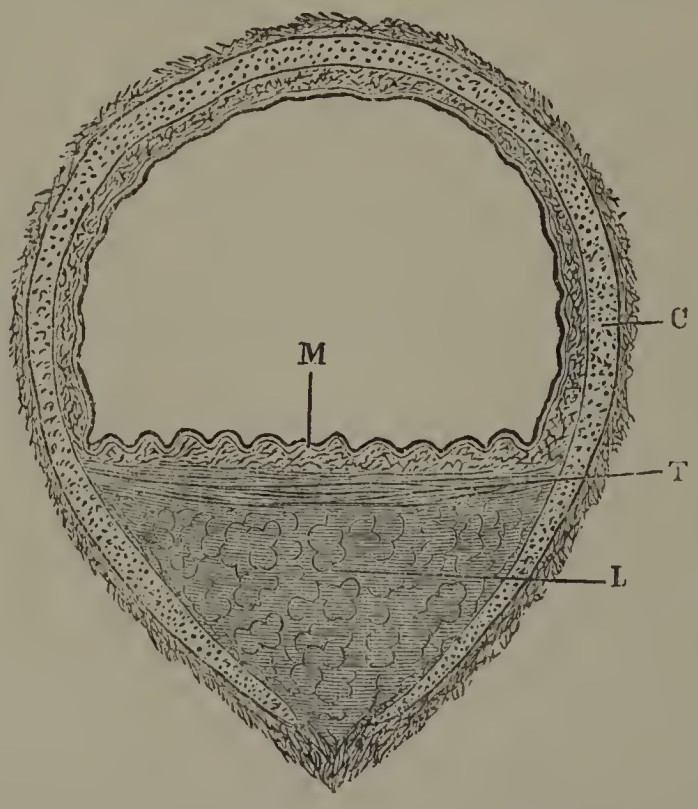
The microscopic examination of the plug which fills the bronchi of the diseased part shows that it is made up of amorphous or finely granular material, and of a great variety of elements, in varying quantities and different stages of destruction. Among these are found quantities of columnar epithelium cells, all of which are granular and may be broken. On some of them cilia may still be recognised. There are also great numbers of large indefinite granular cells which contain a distinct neucleus. Blood-cells and discs are also found, in some cases the quantity being enormous. Besides these elements are numerous threads of fibrin, and many foreign elements, such as fungi, bacteria, &c.

For some distance along all the tubes in the neighbourhood of the disease the epithelium is greatly changed. Even in those bronchi whose coats are hardly, if at all altered, the epithelial cells are granular and easily rubbed off the membrane, so that it is almost impossible to make a preparation where they remain *in sitû*. In the part where the lung tissue is solid,

there is never any epithelial lining to the tubes. The elements of the tissue forming the thickened bronchial wall are found to be pushed asunder by exudation and numerous young cells. The fibrillation of the white fibrous tissue is clouded and obscured, and thick bundles of strong elastic fibres stand out boldly, as if the tissue had been treated with acetic acid. The muscular part of the wall is very indistinct. The plates of cartilage are unaltered, but are separated from each other, and seem very far removed from the cavity of the tube, considerable exudation having been poured into the submucous tissue.

By making a series of transverse sections, or a longitudinal section, of the bronchial wall, in one of the least developed foci of disease, one can see that the disease of the mucous membrane extends to a greater distance from the diseased centre than that of the bronchial or of the peribronchial tissue. Occasionally, however, the lymphatics may be affected to an enormous extent : in one case the disease reached to the trachea, and caused partial occlusion of it, by filling the numerous lymph vessels which occupy the posterior part behind the trachealis muscle (Fig. 3). In these cases the

FIG. 3.—*Surface of Transverse Section of Trachea in which the Lymphatics are intensely engorged.*



M. Mucous membrane. C. Cartilage. T. Trachealis muscle. L. Connective tissue and engorged lymph-channels.

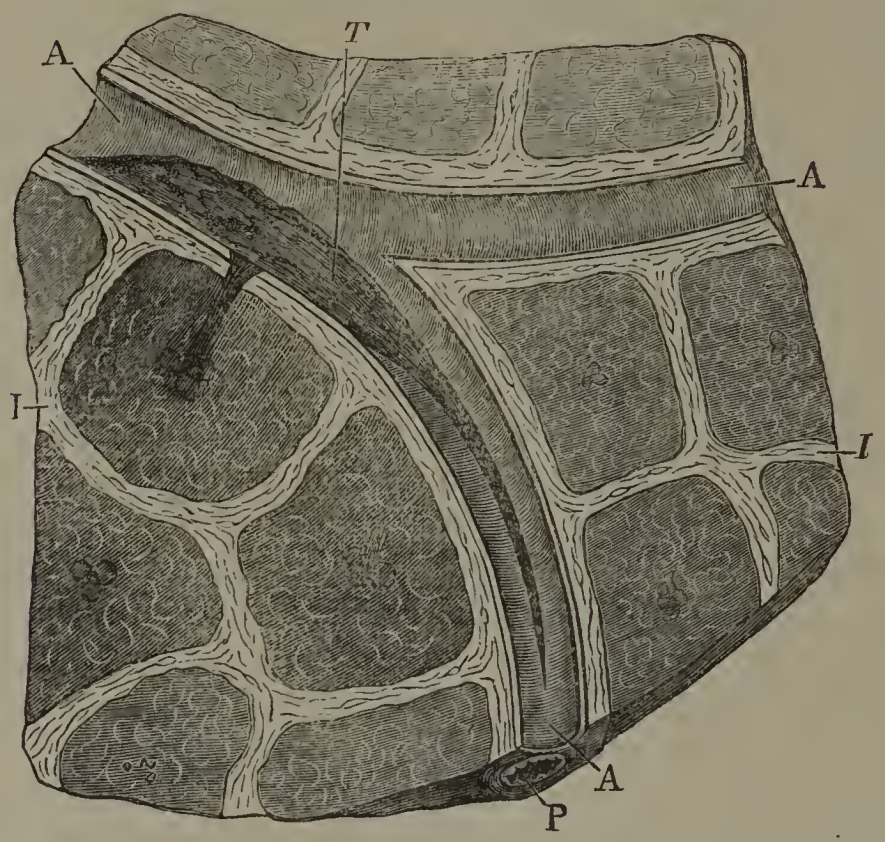
lymphatic glands of the root of the lung are much enlarged, but as a general rule do not become caseous.

In speaking of the normal structure of the lung of the ox, I called attention to the very intimate relation between the bronchial tubes and the blood-vessels. They pass along the same grooves in the lung parenchyma, are surrounded by the same sheath of thin connective tissue, and their lymphatics communicate freely with those of each broncho-vascular system, forming one large set of absorbents, which carries all the lymph of the territory supplied by the bronchial tube and its accompanying vessels. It is not at all surprising, then, that as the morbid changes just described are going on in the peribronchial tissue, the sheath of the blood-vessels participates in the diseased action. The exudation encloses the blood vessels at the same time that it thickens the tissue around the bronchus. So that instead of the three vessels lying in a loose bed of soft tissue, they are encased in a frame which enclosing them all, soon becomes so tough and rigid, that they remain patent cylinders, like tunnels punched out of a resisting substance, such as a piece of turnip (see Fig. 2). The tissue about the blood-vessels is changed in exactly the same way as that around the bronchus, the elements becoming altered in a similar manner.

After a time the walls of the blood-vessels become engorged, the external coat being first attacked, and the other coats in turn becoming thickened and rigid. Often the vessel wall may be increased to several times its normal thickness, and yet the intima looks healthy on the surface. Here and there the intima seems to be also affected. Small red roughened patches are seen on the inner surface of the vessel. The colour seems to depend on staining with the blood contained within the vessel itself. When these rough patches are as large as two or three millimetres across, they are always coated over with a thin pale coagulum. These clots increase in thickness with the increase in size of the damaged patch. Often the intima seems destroyed around the entire calibre of the vessel, or for a considerable extent along one side. In these cases, where the roughness of the intima is extensive, the altered surface cannot be so well seen, as the clot which covers it is very thick (Fig. 4). The vessel is thus partially occluded by a thrombus which, in the case of small vessels, soon completely fills them with a tight adherent plug. When any vessel is quite occluded, all its branches are found to be filled with clots of blood, which are often black and soft, evidently being of recent formation. When an extensive plug lies in a large artery without causing it occlusion, many of its minute branches are usually quite stopped. This appears sometimes to depend on small emboli,

formed by fragments broken off the thrombus in the parent trunk of the artery. In other cases a number of small vessels,

FIG. 4.—*Showing Thrombus of Artery.*



A. Artery. P. Bronchus. T. Thrombus, tapering off to a fine point of fresh congestion. I. Interlobular tissue.

throughout the disease part may be choked up with thrombi, which have evidently been formed primarily in them, and which seem to be caused by several points of the intima being damaged. Once a branch of a vessel has been filled the clot seem to grow with great rapidity into the larger branches, so as to produce occlusion of the parent trunk and of the neighbouring branches arising from it.

As may be inferred from what has already been said of the hæmorrhagic consolidation, the parts of the lung parenchyma to which the plugged vessels lead, are those thus suddenly engorged. The various appearances met with in the formation of hæmorrhagic infarction are now well understood, so I need not pause here to explain them.* Here

* This form of engorgement and hæmorrhage, called by Laennec *pulmonary apoplexy*, is now universally admitted to depend on a local impediment to the circulation, such as an embolus impacted in an artery. There being no arterial anastomosis in the lung, such a plug has a very marked effect. The embolus cuts off the normal supply of blood from the part, and the pressure in the arterial branches beyond the stoppage falls to zero. The blood, however, can still find its way through the capillaries into the branches at the distal side of the plug. The branches of the occluded artery are thus reduced to the condition

the infarction is well marked, but, owing to the many variations in the method in which the coagulation in the vessel may be brought about, there is a much greater variety in its form than is commonly met with in those cases where it depends exclusively upon embolic plugging. The constant conical shape of the black consolidation can now be easily explained, as well as the suddenness with which the engorgement occurs. The variegated appearance produced by small dark-red patches, which is now and then seen on the cut surface, obviously depends on small scattered infarcts, which result from numerous emboli or from irregular and diffused injury to the intima of the small vessels.

The chief points of importance concerning the bronchi and vessels may be thus briefly summed up:—

1. The bronchial tubes are always diseased in the region affected with the opaque conical form of consolidation and in its immediate vicinity.
2. The mucous membrane is extensively diseased, the epithelium destroyed, and the bronchus filled with a plug.
3. In this region also the walls of the bronchus are thickened, and its calibre is diminished.
4. The sheath common to the broncho-vascular system is throughout swollen, rigid, and densely infiltrated.
5. The lymphatics of the entire vascular territory are rendered impervious by dense exudation.
6. In the early stages of the affection, the morbid process of the lining of the bronchus is more extensive than that of its wall and surrounding tissue.
7. The walls of the vessels may be implicated and their lining membrane irritated and damaged.
8. Thrombosis may occur at one or several points of the vessels, and cause the occlusion of some of them.
9. Small emboli may break off from a thrombus, and plug several branches of the artery.
10. The disease seems always to make greater progress in and around the bronchus than around the corresponding vessels.

of occluded veins, and as they have none but capillary connections, they may be said to form blind ends to the adjacent arteries. The blood then trickles into these arterial branches and fills them, but no outward flow can take place, therefore they become intensely engorged with stagnant blood. Under these circumstances the inner coat of the vessel is deprived of its nutrition, for which the constant renewal of the blood is required. This starvation of the minute vessels renders them unfit for their function; they lose their power of retaining the blood, which escapes into the neighbouring textures, forming the dense black consolidation now known as *hæmorrhagic infarction*.

Conclusion.

In the foregoing pages I have attempted to adhere to a plain statement of facts, as supplied by the notes of the autopsies taken on the spot, and by the examination of numerous specimens which have been sent to my laboratory. I have tried to avoid any expressions which involve theories, and have done little to work out the course of the very interesting morbid changes which form the essence of this disease. Without some effort, however, to follow the order in which the varous pathological events occur, the description of the appearances would be barren of interest or utility. I shall therefore now try to trace the sequence of the morbid processes; thus the order in which they may occur may be ascertained, and possibly the initial stages of the affection arrived at.

As may be seen from the brief summary of the views held on this subject, which was given in the beginning of this paper, it seems generally agreed that the pleura, or the subpleural and interlobular tissues, is the part first attacked. Although I commenced work with this idea firmly fixed in my mind I cannot make my observations coincide with such a view, and I think many of the facts enumerated show that his cannot be the case.

In the attempt to trace each lesion to its exciting cause, I have, in every instance, been obliged to pass from the pleural surface towards the deeper parts.

If the pleura were the starting-point of the disease, we ought to find the entire of the membrane, on one or other side of the chest, affected evenly throughout. Such is the common course of acute affections of the pleura, and the inflammation in this disease is generally of such an acute type that twenty-four hours would suffice for it to spread over the entire membrane. But I have invariably found that the pleural inflammation is either localised to the place where the lung is diseased, or is much more developed at that point.

With such acute pleurisy as is often found, a case ought surely now and then to occur where intense fever constitutional disturbance would lead to the early recognition of the disease and call for the immediate slaughter of the beast; and if the pleural inflammation were really the initial step in the disease, we might fairly expect occasionally to find a case in which pleurisy was the only part of the affection as yet developed. But this is not so. I have never seen, nor heard of a case in which pleurisy alone existed. The lung tissue is

always diseased to some considerable depth. I have found, on the contrary, that the typical changes may occur in the lung, without any trace of pleural inflammation.

In the common run of cases, where pleurisy is associated with extensive disease of the lung, the latter always gives the impression that it is of much older standing than the pleural affection. The pleurisy is commonly acute, while in the lung we usually have evidence of such chronic changes as would require a very long time for their development. From comparing the lung lesions with the clinical history, I have often been forced to believe that the disease had existed for a very much longer time than was believed during the life of the animal. In one case, where the cow was described as having been in perfect health three days before I saw the lungs, and was said to have given nine quarts of good milk the day before, I found lesions in the lung, which, I think, must have taken at least six weeks for their production, associated with the first stage of intense pleuritis. Another cow, which was said to have been well, and milking five days before death had a condition of lung which I cannot imagine could be developed under four or five months. Here there was also recent acute and extensive disease, engaging the entire of the left pleura.

The duration of the clinical history usually corresponds with the stage of development of the pleuritis, and never with the disease of the lung. I am convinced that the lung disease usually exists for months without being suspected, and invariably the beast is first thought to be sick only when the affection has spread to the pleura, and caused intense inflammation of that membrane with its accompanying well-marked symptoms. And I believe that if our diagnostic powers were improved, cases of pleuro-pneumonia without pleurisy would more frequently be met with.

In thus asserting that the pleural lesion is secondary to that of the lung, I do not mean to imply that the lung parenchyma cannot under any circumstances become secondarily affected from the pleura covering it. It will presently be seen that nothing is more common than this spreading of the disease from the pleura to the subjacent tissue. It can be seen in every case where the inflammation of the pleura is severe, and has lasted some little time. The infective process may be communicated from the primarily affected lobe to its neighbours, by means of the intervention of the pleura, and in these cases the pleura does not seem to be the starting-point of the processes in the lobes, which are thus secondarily engaged. But if the primarily affected lobe

be carefully examined, it will always be found to contain a wedge of typical marbling, extending towards the root of the lung, with the bronchi and vesseles diseased in the manner already described. In this deep-seated, conical, indurated region, the morbid process is more developed than elsewhere. And it is such a centre, I believe, that forms invariably the original point of disease. One such focus, at least, can always be found in some part or other of a diseased lung, no matter how extensive the wide-spread shallow pleural infection may be. To me it seem impossible to explain this chronic, old, indurated part of the lung disease as a result of the acute, recent pleurisy.

On the other hand, there is no difficulty in explaining the pleuritis as a result of the lung lesion. In many of the cases slaughtered immediately after the development of the pleural inflammation, this relationship is most obvious. Putting aside the existence of any specific form of infective material, the irritation and inflammation of the pleura may be explained by the mere mechanical injuries done to the membrane by the swelling of the subjacent lung during the disease. To this exciting cause may be added defective lymph drainage and impaired blood supply.

In the cases where the pleural disease is associated with hæmorrhagic infarction—and these are remarkably common—of course there can be no difficulty in explaining the pleuritis. The pleura may be torn; some blood may escape into its cavity and set up general inflammation; and the part of the membrane corresponding to the infarction is always cut off from its supply of normal nutrition.

There can be no doubt, however, that in the tissues affected by this disease there must exist, or be produced, some material with infective properties, and therefore there can be no difficulty in finding a cause of the inflammation of the susceptible serous membrane.

I am thus forced to believe that the pleurisy is invariably secondary to the disease of the lung parenchyma. The next question then must be, what is the immediate cause of the pulmonary lesion?

It has been said that different kinds of morbid changes are found side by side in the lung, the immediate exciting causes of which must be quite distinct. The most constant of these is the opaque consolidation, which is comparatively deep-seated and localised to a conical territory, gradually increasing in extent and induration. A second, the most wide-spread change, seems to be an interstitial exudation or interlobular pneumonia starting from the pleura, or from the last-men-

tioned lesion. A third, perhaps the most distinct and striking, is the black hæmorrhagic infarction.

The immediate exciting cause of the last mentioned morbid process seems clear enough. We know that when the lining membrane of a blood-vessel is injured, the blood coagulates at that point, and this coagulation increases if the irritation continues to destroy the smoothness of the inner coat. Thus we have thrombosis, leading to vascular plugging. The *modus operandi* of vascular occlusion in causing hæmorrhagic infarction of the lung is now well understood, and has already been referred to. It only remains, then, to search for the origin of the irritation of the vessel-wall in order to complete the pathogeny of this lesion.

A ready cause of the disease of the wall of the vessels is afforded by the engorged state of the peribronchial lymph-vessels. The entire broncho-vascular system is surrounded by one set of lymph-vessels, through which the irritative processes can penetrate with great facility (see Fig. 2, p. 513). When the lymph-channels around the vessels are thus engorged, one can easily understand how the chronic inflammatory processes infect their proper walls, and finally reach the intima.

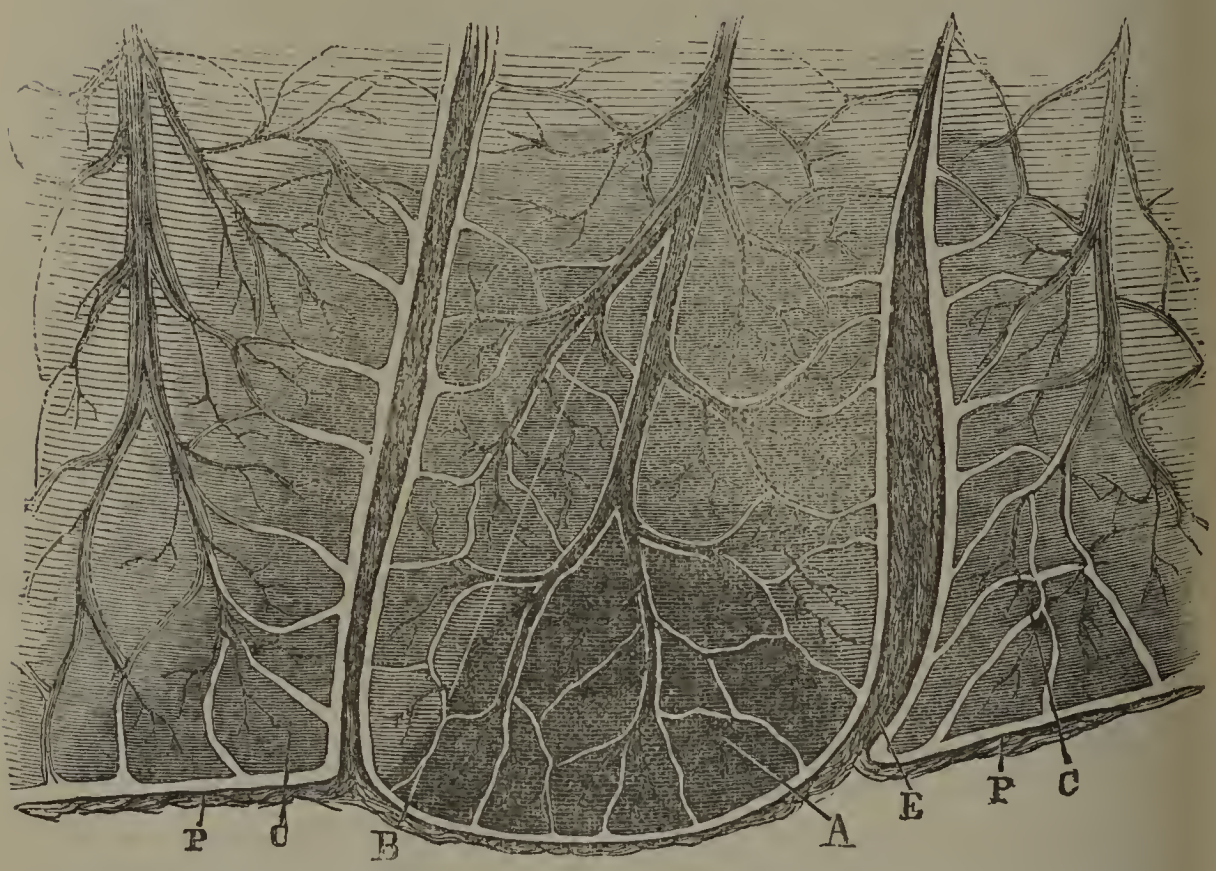
There appears no reason to doubt that this chronic inflammation, which takes place in the connective tissue sheath of the broncho-vascular system, is the immediate cause of the great thickening of the walls of the vessels, which always precedes, and is more extensive than, the injury to the inner coat. And there does not seem the least reason for supposing that the disease of the vessel wall precedes that of the surrounding tissue. On the contrary, such an idea is rendered most improbable by the fact that the neighbouring parts are always more extensively diseased than the vascular wall, the inner coat being the least affected, and often escaping altogether. These points will appear more obvious when the course of the bronchial lesion is discussed.

Both the other forms of consolidation obviously depend upon causes quite distinct from that which induces infarction; and, moreover, a little consideration shows that the mode of commencement of one of these is very unlike that of the other.

The clear exudation is always more wide-spread and superficial, less solid and less defined, than the opaque induration. The tissue elements remain normal even after the exudation has become intense. The vessels and air-passages are pervious and little altered. It might be described as intense inflammatory œdema, while the other may be termed

croupous consolidation. From the distribution and relations of this clear exudation, it appears certain, as just stated, that it is the result of infective action spreading, by means of the

FIG. 5.—*Semi-diagraphic Sketch to illustrate the mode of extension of the Disease.* (*A portion of three neighbouring lobes is shown.*)



The darkest part of the central lobe (A) is the starting-point (*opaque consolidation*); the lighter part of same (B) shows extension of the *clear exudation via* bronchial lymphatics (C) by means of the pleura (P). (E) Pleural exudation. Reduced to one-fourth.

lymph-vessels from the inflamed pleura, and along the broncho-vascular system. But I have already stated that the pleura cannot be said to take the initial step in the disease, so we must look for some other cause of the dense opaque consolidation, which certainly does not depend upon pleural infection.

The first thing that strikes one as remarkable about this form of lung-lesion is its shape. This always is the same as that of the territory supplied by the broncho-vascular system which enters as its deepest part. In this respect it bears some resemblance to the infarction. In the case of the latter, however, its mode of production and its cause explains its shape, but the blood-vessels in the young cone of opaque consolidation are, as a rule, healthy and pervious, and therefore can throw no light on the matter.

Let us examine what changes are constant in this cone. By making a fair section directly through the centre of a

small isolated focus of the dense pale induration—and to such a stage of the disease we must look to learn its initial steps— three important facts become obvious; first, that the air-cells are filled with croupous exudation; secondly that the bronchial tube and its branches are plugged with a dense, adherent, fibrinous mass; and thirdly, that all the lymph-vessels around these air-tubes are swollen and turgid, being the seat of a dense fibrinous exudation. Looking at such a specimen, one cannot avoid being impressed with the idea that the occlusion of the bronchus and the engorgement of the lymphatics immediately surrounding it must be the cause of the lobular consolidation and the interlobular exudation. The more I have tested this view by careful scrutiny of the diseased parts, the more firmly convinced I am of its truth and importance in explaining the first steps in pleuro-pneumonia. I am at a loss otherwise to understand the peculiar localisation, the sharp demarcation, and the conical shape; all of which are such constant characters of the opaque consolidation, particularly in the early primary nodules of the disease; but, if this view be correct, they all are easily accounted for.

A focus of opaque consolidation being once established, there is no difficulty in accounting for the clear exudation which so constantly surrounds it. When once the broncho-vascular set of lymph plexuses have become the seat of this irritating exudation, it is easy to imagine how they will facilitate the spread of the disease. Encompassing the bronchus, they lead the infective material to irritate its coats, and cause them to undergo a kind of chronic destructive inflammation. At the same time, traveling along the lymphatics towards the root of the lung, the inflammatory process comes upon the tributary broncho-vascular systems, chokes their lymph-passages, and thus produces interlobular exudation throughout the territory from which they come. There is no difficulty in working out a great variety of ways in which the disease may be spread through the lung by means of the peribronchial lymph-vessels, on the one hand, and those under the pleura on the other; the former leading the infective process to the root of the lung, the latter extending it over the surface of the organ. Thus the soft translucent form of exudation may be spread in two ways, viz. by the subpleural and by the peribronchal lymphatics. This would sufficiently account for its irregular outline and indefinite distribution.

But, even admitting that the irritative change in the peribronchial tissues is the cause of the thrombosis and conse-

quent infarction, and that it also takes a great share in the production of both forms of solidity of the lung parenchyma, we have made but little way towards finding out the starting-point of the disease. The occurrence of the peribronchial exudation remains to be accounted for, and its exciting cause must be discovered before we can speak of the first step in the morbid processes, without which the life-history of the disease is deficient in the most vital point.

There seems every reason to believe that this is a process which goes through the same series of events as chronic inflammation, such as would follow any form of persistent irritation, and lead to intense induration. It is needless to go into the much-vexed question whether this be an inflammatory disease or not ; authors differ not only amongst themselves, but even with themselves, upon this point. We only know inflammation as a certain series of phenomena occurring in a certain order.

(*To be continued.*) 686

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Monthly Council, Wednesday, July 3rd, 1878. Colonel Kingscote, C.B., M.P., President.

VETERINARY

The *Hon.* M P *Egerton, M P.*)chairman) reported that the Committee had received Mr. Duguid's statemnt as to the number of applications for advice made by members of the Society during the half-year ended June 24th. Since the end of the half-year Mr. Duguid had reported as follows in reference to an outbreak of diarrhœa amongst lambs on the farm of Mr. Stonham, Aldington, Thurnham, near Maidstone, who attributed it to their feeding on certain grasses, a sample of which had been sent to the Consulting Botanist.

At Mr. Stonham's request I visited his farm on May 22nd and found nearly the whole of his lambs, 140 in number suffering from a severe form of diarrhœa. The lambs were weaned on April 6th, and did well up to the beginning of May. I made a *post-mortem* of two that were in a dying state at the time of my visit, but failed to make out the cause of the mischief. I advised a change of food, and they were removed from the field in which they had been grazing. Mr. Stonham at first thought they were suffering from typhoid fever, but on finding a quantity of *Lolium temulentum* appearing in the field, he considers that to have produced the diarrhœa. The lambs are now doing better—30 have died and ten more are not expected to recover. The remaining 100 Mr. Stonham writes, are doing well.

Mr. Duguid also reported in reference to the experiments now being carried out at the Brown Institution, as follows :—

The first series of pleuro-pneumonia experiments were completed by March 1st, 1878. Of the 9 animals inoculated, 1 died from other causes soon after the inoculation, and the other 8 were exposed to the contagion by cohabitation with diseased animals as has already been reported to the Society. Of these 2 were sold to a butcher, and the lungs examined and found healthy. Four more were sold after being kept under observation for nearly three months after the exposure to the contagion. One was killed on account of diseased liver and injuries inflicted on stomach and lungs by a surgical needle accidently swallowed with the food. One animal was exchanged for another to commence a series of observations on anthrax. In May 4 yearling heifers were purchased for £27, and further experiments on anthrax and pleuro-pneumonia are now in progress.

This report having been adopted,

The *Earl of Powis* called attention to the statements which had been made in the newspapers in reference to the extraordinary mortality amongst the deer in Cassiobury Park, and asked whether any light could be thrown as to its cause.

Dr. Voelcker thereupon stated that he had received some samples of water from a park in Kent, where large numbers of deer had also died, and the mischief had been attributed to impurities in the water, but on examination he found nothing in the samples sent to him to justify this inference. He was rather disposed to attribute the mortality amongst the sheep which had been reported upon, to the effect of the succulent grass which was the result of a rapid growth in spring, after previous heavy rains.

Mr. Rawlence corroborated Dr. Voelcker's views with regard to the effect of such rapidly-grown grass upon sheep, and quoted instances derived from his experience of the management of over four thousand sheep annually. The mortality amongst them this was excessive, and was caused chiefly by diarrhœa brought on by too succulent food, and his neighbours' experience was the same as his own.

Professor Simonds also endorsed Dr. Voelcker's statement as to the effect of unripe grass upon sheep in producing diarrrhœa, and consequently great mortality ; but the deer to which Lord Powis had alluded were supposed to have been bitten by dogs, and to have died of rabies. He had not found, however, any ground to sustain this belief, and whatever the precise nature of the disease should turn out to be, he could at present only say that it was a disease of the brain and of the nervous system generally. In the same park as the deer a flock of sheep had been kept, amongst which great mortality had occured, so that at

present only 30 or 40 were left out of the original number 150 ewes. One of these sheep had been examined at the Royal Veterinary College. It arrived in a state of extreme emaciation, and died shortly afterwards. A *post-mortem* examination showed that the true stomach was infested with nematode parasites in myriads. He predicted this as soon as he saw the animal, before the *post-mortem* commenced, as he had many years ago directed attention to this particular disease. He quoted cases which had been brought before him originally, and in which the *post-mortem* examination showed no disease in the vital organs whatever, except inside the true stomach, where these parasites, which are called *Strongylus contortus*, were attached by their heads to the mucous membrane of the stomach as thickly as the hairs upon one's head. Consequently other cases were brought to his notice both in the lambs and sheep, which had been fed in all ways, but the preponderance of cases arose from those which had been fed partly on grass and partly on turnips. The late Mr. Jonas Webb had, however, asked him to inspect, on a chalk-land farm, a flock of sheep supposed to be suffering from rot, and which rarely, if ever went on natural grass. He found that this affection was the same as that he had been alluding to; and on making a *post-mortem* examination of one of them it occurred to him to try the effect of salt on the parasites in the stomach. A strong solution killed them instantly, so he took the hint, and administered salt to the diseased animals with very good effect. This disease had all the appearance of fluk-rot, but with this difference, that the sheep attacked by it never have diarrhœa, but are always constipated. The salt should be administered in the form of table-salt and water with the food of every meal, and the animals should have a quarter of an ounce of salt per head per day. He feared that the disease had been prevalent too long among the sheep to leave them sufficiently strong to recover under any treatment.

In answer to Mr. Pain, with regard to the large number of mares which had this season slipped their foals,

Professor Simonds stated that he believed this peculiarity to be due to the character of the food of the mares, which had set up rheumatismal inflammation.

Mr. Robert Russell expressed his opinion that the losses of sheep from diarrhœa were due to the animals not having a sufficient amount of dry food, for, owing to the high price of hay, farmers had sold as much of that feeding material as possible. In his case he might say that his sheep had never done so well as during this season.

Mr. Whitehead corroborated Mr. Russell, and expressed the hope the investigation into the character of the grasses alluded to in the report should not be allowed to drop. His own opinion

was that something more than rank grass must have been present to cause the mortality which had been described in the Report.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL HELD JULY 11TH, 1878

Present.—The President in the chair; Professor Williams, Messrs. Balls, Batt, Blakeway, Broad, Cartwright, Collins, Cox, Cuthbert, Dray, Fleming, Freeman, Gowing, Morgan, Taylor, Williams, Withers, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

The following letters were read.—1st. From some of the members regretting their inability to attend the meeting.—2nd. Letters were read from the six vice-presidents acknowledging their election. From Mr. Woodroffe Hill, of Wolverhampton, presenting to the library of the College a copy of his work on the 'Management and Diseases of the Dog,' and also from Professor Voelcker presenting three pamphlets on 'Guano,' etc. Moved by *Mr. Dray* and seconded by *Mr. Gowing* that a vote of thanks be awarded to Mr. Woodroffe Hill and Dr. Voelcker for their presentations. Carried.—3rd. From Mr. Jenkins acknowledging the receipt of a letter of the 6th instant, and stating that it would be laid before the Veterinary Committee at their next meeting.

At a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held on July 2nd, six students from the Royal Veterinary College passed and received their diplomas, and one was rejected.

At a meeting held for the Second Examination on July 3rd seven passed.

At the meetings held for the "First Examination" on—

July 4th,	8	passed, and 4	were rejected.
July 5th,	9	,, 3	,,
July 6th,	8	,, 4	,,
July 8th,	8	,, 4	,,
July 9th,	5	,, 1	,,

Making a total of 45 passed and 16 rejected.

A letter was read from Mr. Francis Maynard, of Romsey, Hants, asking his case to be laid before the Council, and that his fee of three guineas be refunded to him.

The Secretary explained that Mr. Maynard had had a severe attack of measles in April, and his medical man advised him not to come up before the Board. Since then he had been rejected at the preliminary examination of the Royal Veterinary College.

After some conversation,

The President ruled that Mr. Maynard be allowed to come up for future examination for the fee that he had already paid.

A letter was read from Mr. John R. Miscamble, of Melbourne, Victoria, which was addressed to Professor Simonds, asking whether he could obtain a diploma and be admitted a member of the Royal College of Veterinary Surgeons without coming to England and undergoing an examination.

The President said it was obvious that such a proposition could not be entertained.

The Secretary stated that a student who had been rejected three times and disqualified under the two years' system had written asking to be informed whether he might enter the Glasgow Veterinary College and pay fees as a new member.

The Secretary was instructed to send an answer to the effect that, according to Bye-law 37, no student would "be allowed to present himself before either section of the Board of the Royal College of Veterinary Surgeons for his first, second, or third examination more than three times."

The Secretary announced that a letter dated 7th July had been received from the New Veterinary College, Edinburgh, in which three students who had been rejected at their "second examination" in April last asked to be allowed to come up in July, as the same Examiners would be present at the "Pass Examination." They considered it would be a great hardship and loss of time if they were not allowed to avail themselves of this second examination.

In reference to this question, the *President* referred to Rule 46, which states that "No examination shall take place unless there are at least nine candidates for examination." He thought the meaning of the bye-law was that each examination should be considered as separate, and he should so read it himself.

Mr. Collins proposed that that reading of the bye-law should stand good and that the application should be refused.

Mr. Dray seconded the proposition, which was adopted.

The Secretary stated that three or four letters had been received from Dr. Dunsmure in reference to the approaching examinations, in which he stated that if all the students came up there would be 69 for the "First Examination" and 10 for the "Pass Examination," the latter to take place on the 18th and 19th inst.

The Secretary intimated that a letter had been addressed to Prof. Simonds from Mr. Farrance in reference to the assumption by Messrs. Stapley and Son, of Eastbourne, of the title of M.R.C.V.S. The son had become a Roman Catholic priest and

had gone to the Continent, and the door-plate had still on it the inscription "Messrs. Stapley and Sons, M.R.C.V.S."

In answer to an inquiry,

The Secretary stated that the father was not a member.

Mr. Gowing said the question was whether the father sent his accounts out as a member of the College.

Mr. Fleming observed that the plate itself was wrong.

Some conversation ensued on the subject, the President in the end expressing his opinion that it was a case with which the Council could not interfere. The Secretary could only adopt the usual course of writing to say that one of the parties was not a member of the Royal College of Veterinary Surgeons, and the correspondence could be published in the local newspapers.

A letter was also reeeived from Mr. Lyon, of Forfar, enclosing several alterations and corrections since the last edition of the Register.

The obituary notice was read.

The Secretary called attention to the fact that a member of the College in Birmingham had received a copy of the Register, and, although twice applied to, had omitted to send the price of same.

Mr. Cartwright, who stated he knew the gentleman in question, said he would call upon him and ascertain whether there had been any mistake.

Moved by *Mr. Dray* and seconded by *Mr. Gowing*, "That no Registers be issued unless prepaid."—Carried.

The Secretary was authorised to send out the usual number of gratuitous copies of the Register, with the addition of a copy to the Indian Office.

Election of Examiners for the Fellowship Degree.

Some discussion ensued as to the number of examiners it was desirable to appoint, when it was eventually arranged that four professional examiners should be elected, and that the Secretary would summon three out of the four; and also a member of the College of Preceptors.

The vote having been taken, it was found that the following gentlemen were elected examiners:—Professors Williams and Duguid, and Messrs. Fleming and Harpley.

It was decided that the President should fix the date for the examination.

Appointment of Committees for the year.

Finance Committee.

The members of this committee (Messrs. Broad, Balls, Harpley, Moon, Taylor and Withers) were, on the motion of Mr. Dray, reappointed, and Mr. Greaves was added to the number.

Publication Committee.

On the motion of Mr. Dray, Professor Brown and Messrs. Cox and Fleming were reappointed members of this committee.

House Committee.

Messrs. Balls, Batt, Broad, Harpley and Withers were re-appointed, and, on the motion of the Secretary, Mr. Dray's name was added to the list.

College Fund Committee.

The members of this committee appointed were Professor Brown, and Messrs. Balls, Broad, Gowing, Harpley, and Dray.

Parliamentary Committee.

Professors Simonds and Brown, and Messrs. Broad, Cox, Fleming, Gowing, and Harpley were reappointed, with the addition of Mr. Taylor.

Library Committee.

The members of this committee—Messrs. Blakeway, Dray, and Harpley—were re-appointed.

Report of Finance Committee.

The report states that the vouchers and receipts for payments during the preceding quarter had been examined and found correct; and that the present liabilities amounted to £134 19*s.* 2*d.*, which the committee recommended should be discharged.

In answer to the President,

Mr. Withers (the Treasurer) stated that the receipts were slightly over the expenditure.

Professor Williams and *Mr. Morgan* called attention to what they considered the enormous expenditure attending the examinations in Scotland compared with those in England.

After some discussion it was resolved "That it should be an instruction to the Finance Committee to furnish details of the expenditure attending the Scotch examinations to the Council at their next meeting."

A recommendation from the House Committee as to the repairing of some worn-out chairs in the Council-room was acceded to.

Definitive orders were given for the providing of soft specimens for the use of the examiners at the various examinations.

Report of the Conference Committee.

The following report and proposed arrangements were submitted to the consideration of the Council:

The Committee appointed by the Council of the Royal College of Veterinary Surgeons to adjust terms of agreement with the Highland and Agricultural Society—having received the proposals of the latter body—

Beg to recommend to the acceptance of the Council of the Royal College of Veterinary Surgeons Clause 1.

Also Clause 2, except the word "free" in line 3rd. As the admission of the holders of the Highland and Agricultural certificate without examination cannot be effected under the present Charter, and as the application for and obtaining of a new Charter will involve considerable expense, your Committee think that each member admitted should pay a registration fee of £1 1*s.*, being the same amount as is now paid for registration by those who pass the examination of the Royal College of Veterinary Surgeons.

Your Committee recommend the acceptance of Clause 3.

Also of Clause 4.

Also of Clause 5.

Your Committee see great reason to object to Clouse 6, and strongly recommend that it be not agreed to. It would create a body with legal rights outside the body corporate.

Arrangements proposed by the Highland and Agricultural Society of Scotland for admitting the Society's Certificate-holders as Members of the Royal College, and terminating the Examinations of the Highland and Agricultural Society.

"1. The Royal College of Veterinary Surgeons to hold the Examination of the Highland and Agricultural Society as sufficient, and to admit their Certificate-holders without further examination.

"2. All the Highland and Agricultural Society's Certificate-holders passed before 1871 to be admitted Members of the Royal College free; those passed in 1872 to pay one guinea; and those passed in the following years, to 1878, to pay a sliding scale from two to seven guineas.

"3. Those Students now enrolled at any of the Teaching Schools who may pass for the Society's Certificate, to be enrolled Members of the Royal College of Veterinary Surgeons on a payment of seven guineas.

"4. That the Society's Examinations shall terminate in three years from the time this arrangement is adopted.

"5. The Highland and Agricultural Society agree to the above arrangements on the understanding that the Annual Meeting of the Royal College of Veterinary Surgeons shall be held in Edinburgh once in three years; and,

"6. That if at any time the Royal College of Veterinary Surgeons should apply for a penal clause against persons practising

the veterinary art without a legal qualification, the holders of the Highland and Agricultural Society's Certificate shall be exempted from such penal clauses."

The President explained that at the last meeting of the Council a Committee was appointed with extensive powers to come to some arrangement, if possible, with the Highland and Agricultural Society. The Committee had not actually met, but the members had been in communication, and came to the opinion that they did not know sufficiently the mind of the Council or of the profession to justify them in doing anything more than feeling the pulse of the Highland and Agricultural Society. He had met the Secretary of the Highland and Agricultural Society about a fortnight ago in Paris, and had subsequently, by arrangement then made, had a conversation with him in London as to what the Royal College of Veterinary Surgeons would probably concede, and he (the President) suggested to him that he should, on his part, give the terms which the Highland and Agricultural Society wished to have, which had now been laid in a printed form before the Council. He then met Mr. Robertson and talked over with him what reply the Committee would recommend should be sent to the Highland and Agricultural Society in regard to the terms they proposed; but nothing had been absolutely done in the matter, and the Council were perfectly free to take any steps they chose in regard to the views of the Highland and Agricultural Society and of the Committee. He did not attach much importance to the penal clause; but the object in view was to prevent people from adopting the title of Veterinary Surgeon unless they had the licence for doing so. In talking with the Committee on several occasions it was thought the scheme would be an entire failure, except the Council were induced to concede such liberal terms as would include in their body the whole of the members of the Highland and Agricultural Society. Some people might think that the cost was greater than the gain, but having had some conversation with some gentlemen on both sides of the question he would give the argument on both sides. If the Council wished to draw in the Highland and Agricultural Society's members, it would be absolutely essential to assent to Clause 1. The Highland and Agricultural Society wished their members to be admitted free, but the Committee did not think that this would be right, because there would be a considerable expense in obtaining a supplemental charter in order to admit them, and because members of the Royal College of Veterinary Surgeons were obliged to pay a fee previous to their being admitted, and the Committee did not see why the Highland and Agricultural members should not pay the same fee. The Committee recommended the acceptance of Clause 3—"Those students now enrolled at any of the Teaching Schools who may pass for the Society's

Certificate to be enrolled Members of the Royal College of Veterinary Surgeons on a payment of seven guineas." At first sight he thought that this was wrong. He could not see why they should not pay the same fees as others; but after a conversation with the Secretary of the Highland and Agricultural Society he was rather induced to take the other view, namely, to place those who were at the schools of the Highland and Agricultural Society in the same position as those the Council proposed to admit who had passed last Easter. Clause 4 also at first sight appeared to be wrong; but it was urged strongly that those who were studying at and had joined any school, had a vested right if they chose to be examined by the Highland and Agricultural Society, and he recommended the Council to accept the clause. Clause 5 the Council would in all probability object to, which asked that the annual meeting of the Royal College be held every third year in Edinburgh. Personally he advocated the holding of the meeting there every three years, but probably there might be a strong feeling against the compulsory adoption of that clause. Clause 6 the Committee objected to and strongly recommended that it be not agreed to. The Committee were very much in the dark as to what the feeling of the Council was on the subject, and it would be for the Council to say what propositions they would agree to adopt.

Mr. Fleming said the subject was a difficult one to deal with, and one in which the whole body of the profession was interested. It was injurious to them as a body that a society in Scotland should give degrees, and while they might be anxious to make concessions to the Highland and Agricultural Society, they should take care that nothing was done that would injure the reputation of the profession. With regard to Clause 2, he thought the Highland and Agricultural Society were asking too much in proposing that their certificate-holders passed before 1871 should be admitted members of the Royal College free. He therefore thought that a registration fee should be charged. With regard to Clause 5, he did not think they ought to be at the dictation of the Highland and Agricultural Society of Scotland as to where they should hold their meetings. With regard to the 6th Clause, he did not think it would be right in the Council to entertain it.

Professor Williams agreed with Mr. Fleming that the word "free" should be expunged from the 2nd Clause. He spoke from practical knowledge of the matter when he said that there was not a single individual holder of the Highland and Agricultural Society's certificates who expected to be made a member of the Royal College without the payment of the same fee as was paid by those who obtained the diploma of M.R.C.V.S. Clause 3

he thought objectionable, as it would tend to delay the period of union. But as the representative of the Highland and Agricultural Society pressed it, he thought the Council might accept it, especially as it was not probable that any separate examination would be held after union had been agreed to. The same argument would apply to Clause 4. He believed the interest of the profession would be advanced if the meetings were held in Scotland; but he did not think the Highland and Agricultural Society ought to insist on their meeting once in three years in Edinburgh. With regard to Clause 6, he thought the recommendation of the Committee on that and other clauses ought to have the warm approval of the meeting, because he was strongly of opinion that they would be acceptable to the Veterinary profession. He thought they ought to meet the Highland Society on as fair and liberal terms as possible. He begged to propose "That the Committee enter into communication with the Committee of the Highland and Agricultural Society on these terms: that the 1st Clause be accepted; that the 2nd Clause, with the exception of the word 'free' be also accepted; that Clause 3 and 4 be also accepted; and that Clauses 5 and 6 be not entertained."

Mr. Fleming seconded the motion. After some conversation, in which Mr. Taylor and Mr. Morgan took part, the motion was put and carried unanimously.

A SPECIAL MEETING

was afterwards held for the consideration and adoption of Bye-law 50.

The President said that the feeling of the Council had on several occasions been strongly expressed in favor of requiring a good educational status from candidates for the higher degree of Fellowship. The object of Bye-law 50 was to secure that status. He proposed to add to the certificate mentioned as sufficient in that Bye-law, the passing of the Civil Service or Army Examination. It was a well-known fact that all those who had passed the Civil Service or Army examinations possessed the necessary amount of educational status to qualify them for the Fellowship; therefore, some time ago, he moved that these examinations should be considered sufficient, and he was also perfectly willing to move that any other examination which the Council thought sufficiently stringent should be included. If they were satisfied that a man had a good education he could not see the object of asking him to go before the College of Preceptors. He therefore proposed to add to Bye-law 50 "after the word Veterinary Surgeons," or gentlemen who have passed the Civil Service or Army Examination held by the Civil Service Commissioners.

Mr. Fleming seconded the motion.

Mr. Morgan thought that the bye-law would scarcely meet the point. There was something in the words, "or after an examination," which would deter them from coming. Some men would say that they had left school too long to go into grammatical matters. He did not see any necessity for the bye-law at all, and would propose it be abolished.

Mr. Fleming said that in that case they might as well abolish the Fellowship Degree altogether. They would be degrading the profession if they admitted men who could not prove that they were fit to read and write their own language. It was absolutely necessary that the public should have some independent guarantee that Fellows were men of education.

Professor Williams suggested, as a means of meeting the difficulty, the word "undergo" instead of "after."

Mr. Morgan suggested that the last sentence of Rule 49 should be made to read, "This Special Court shall consist of not less than four members, of whom one shall be a member of the College of Preceptors."

The President thought the suggestion a happy one, and said he was prepared to accept it. But he thought they should confirm the amendment, because there were some four candidates waiting now to be examined. It would be unfair on the present candidates not to confirm the amendment of Bye-law 50. He was, however, prepared to adopt the further amendment proposed by Mr. Morgan.

The motion for the adoption of the amendment of the bye-law was adopted.

The President then gave notice of amendment of Bye-law 49, as under. Last line, in lieu of "three," insert "four," and add "of whom one shall be a member of the College of Preceptors."

Bye-law 50 cancel.

SPECIAL MEETING OF COUNCIL, HELD JULY 22ND, 1878.

Present—Messrs. Batt, Broad, Collins, Cox, Moon, Withers, and the Secretary.

On the motion of *Mr. Broad*, seconded by *Mr. Batt*,

S. H. Withers, Esq., Vice-President, took the chair.

The minutes of the preceding meetings were read and confirmed.

Letters were read from several members of council, regretting their inability to attend the meeting.

Also letters from Professor Duguid and Mr. Harpley acknowledging their election as examiners for the Fellowship Degree.

On the motion of *Mr. Collins*, seconded by *Mr. Dray*,

The amended "Bye-law No. 50" as adopted at a special meeting of Council held July 11th, was duly signed and sealed in accordance with the provisions of the Charter.

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

On Tuesday evening, July 2nd, a meeting in connection with the above Association was held at the Norfolk Hotel, Norwich, the retiring President, Mr. W. Shipley of Great Yarmouth in the chair; there were also present, Professor Pritchard, of the Royal Veterinary College, London; Dr. F. Cufaude, Acle; Messrs. A. H. Santy, F. Low, G. G. Whincop, and L. Butters, Norwich; J. D. Overed, Blofield, D. Rattee, Hapton; S. Augur, Wymondham; R. Howard, Thetford; J. K. Gooch, Holt; H. Newson, Beccles; and S. Smith, Lowestoft.

Mr. W. Smith, Norwich (through illness which we deeply regret to learn has since terminated fatally), Mr. J. Hammond; Bale; Mr. W. Ellis, Hempnall; and others were unavoidably absent.

After the usual routine business had been deposed of, the President delivered a brief practical address, and afterwards requested Mr. Santy to read his paper on the "Diseases of the Horse's Hock" especially with reference to the examination of horses as to soundness. The essay was of a most interesting and instructive character, and received expressions of hearty approval from those present, eliciting at its close a most animated discussion, in which Professor Pritchard, and most of the members took part.

The election of officers was next proceeded with, and resulted as follows: President, Mr. A. H. Santy; Vice-Presidents, Messrs. D. Rattee, G. G. Whincop, and L. Butters. Treasurer and Hon. Sec., Mr. J. D. Overed. The following gentlemen were elected members: Messrs W. Ellis, S. Augur, L Butters, E. Case, F. Case, J. K. Gooch, R. Howard, H. Newson, and S. Smith.

It is expected that a paper will be read at the next meeting by an eminent member of the profession, and an ex-president of the Royal College of Veterinary Surgeons; failing this, Mr. L. Butters has kindly promised to do so. A hearty vote of thanks was accorded to Professor Pritchard for honouring the meeting with his presence, and he was unanimously elected an honorary member of the Association. Mr. Santy was also heartily thanked for his valuable paper, with a request that it might be published in the professional journals, which was acceded to. A similar compliment having been given to the chairman for presiding, the meeting was brought to a close.

Professor Pritchard, after passing a well merited tribute of praise to Mr. Santy for his interesting paper, with which in the main he entirely concurred, as he thought all those present would, introduced the discussion by remarking that in the detection of bone spavin very much depended on comparing one hock of the *same animal* with the other hock, much more than with the hocks of different animals, as it is a well-known fact that the tuberosities and depressions of the hock joint materially differ in different animals, and even the small bones entering into the formation of this joint are not always the same in number, thereby altering to some extent its appearance and general contour. With these facts before us, it will at once be admitted that the greatest possible care must be exercised in our examinations of horses as to soundness, and especially with reference to the hocks, in order to enable us to arrive at a just conclusion, and to pronounce a correct opinion. It is not, however, the appearance of the hocks upon which we must alone rely, neither may we entirely depend on our power of manipulation for the detection of spavin, for with these aids to our diagnosis we shall occasionally meet with cases very difficult of detection, as for instance in ulceration of the articular cartilages, and internal anchylosis of the small bones of the hock, to which the term occult spavin has been applied. In such cases we must look to the horse's action, and the power to flex the hock, as the basis on which to join our conclusions.

With reference to the treatment of spavin, he would mention an operation (which the essayist had not noticed) viz. of dividing the skin, and faschia over the seat of spavin with a sharp hot iron, (taking care to avoid the vena saphena) the beneficial results of which he had witnessed in many instances.

As to the seat of Curb, Professor Pritchard said the result of his investigations led him to differ somewhat from the views of Professor Williams, and also the late Professor Spooner. On a careful dissection of a horse's hock affected with curb in the first stage of development, lymph as a product of inflammatory action, will be found deposited between the posterior annular ligament and the perforatus tendon, and if this is the part, as I contend, where the abnormal action commences, and where the deposition of lymph takes place, I think we are right in concluding it to be the seat of disease. In examining for curb our attention must be directed to the exact centre of the posterior aspect of the hock, otherwise we might be led into an error by the appearance of the head of the outer small metatarsal bone, which by its large development have been mistaken for curb. With regard to treatment I have nothing material to add to the advice of the essayist.

Referring to the treatment recommended for bog-spavin and thoro-pin, Mr. Pritchard was not in favour of blisters, which frequently increased the enlargment, the increase in some instances which had fallen under his notice, being very marked and rapid, and afterwards difficult to reduce. The application of the spring truss, to be of service requires great niceity of adjustment, so as to produce continued and equable pressure, or excoriation (and probably a blemish) will be the result, necessitating the removal of the truss, which in many instances leads to the reappearance of the enlargements. An eminent veterinary surgeon of my acquaintance advises the administration internally of small and repeated doses of Hydj. Cholr., but in my opinion its use is attended with risk, and therefore cannot be recommended. As a topical remedy firing is probably as successful as any treatment that can be advised.

Mr. Shipley quite agreed with the previous speaker as to the great care with which examinations of the horse's hock should be conducted; in doing so, too much confidence should not be placed in the touch, nor in the appearance of the joint; but a due regard be paid to both these, with a careful observation of the power to flex the part. Even with the greatest care we should not always succeed in arriving at a perfectly satisfactory conclusion and one that was free from doubt, for it was well known that instances occurred of acute lameness, without enlargment, and continued so for a long period, even after the usual treatment had been applied. A case in point occurred in his practice, in which two years elapsed before any enlargement could be detected, the animal suffering acutely the whole time, notwithstanding that treatment, including firing, had been prescribed.

As to what would constitute unsoundness, was still a vexed question amongst members of this profession; an enlargement of each hock unaccompanied with lameness which would be pronounced a spavin by one individual, would be looked upon as congenital by another, the difference being this—in the former case the horse would be unsound, and worth half his original value; in the latter case, neither in value nor usefulness would he materially suffer. Where only one hock was so affected, this difference in opinion was less likely to arise, and an unanimous verdict of unsoundness would probably be pronounced; but in the former case he had proof that it was by no means safe to decide in favor of soundness. On one occasion he most carefully examined a fine young horse for a good client, the hocks of which, though somewhat prominent on the inner side, were pronounced to him sound. On the faith of this opinion the horse was bought, and put to work, he went sound for a short time; but in six weeks became dead lame, and subsequently perfectly useless. From these facts he argued that not only in cases

where one hock was larger than its fellow, but also where both hocks were unusually large and presented a suspicious appearance, he thought it was the duty of the examiner to take a prospective view, and pronounce a verdict of unsoundness.

With reference to the treatment of thoro-pin he was much surprised at Professor Pritchard's remarks as to the ill effects of blisters; in his practice their use had generally been followed by satisfactory results; he could not speak favorably of the truss, as its use with him had seldom been successful, and in some cases the enlargement had much increased in size.

Dr. F. Cufaude asked the essayist whether, when speaking of bog-spavin, he had understood him to say that the synovia in the hock joint was usually increased in quantity from three or four drachms, to two or three ounces, as in the joints of the human subject, synovia did not exist as a fluid, except in disease; to which question Mr. Santy replied in the affirmative.

Mr. Howard stated that he had used a pitch plaster with long tow in cases of bog-spavin with favorable results, and he had sometimes succeeded in removing thoro-pin with the truss, in two instances he had also cured by puncturing the sac, and he wished to hear an expression of opinion from Professor Pritchard, as to this method of treatment, who replied, that he was not in favor of the practise, as when had recouse to, it was usually attended with unsatisfactory results.

Mr Whincop strongly advised the use of long and narrow starch bandages, and when quite dry a flocking to be placed over it, enjoining quiet, and rest in a loose box, in cases of thoro-pin and bursal enlargements generally, especially windgalls. In reply to a question from Mr. Santy he stated that the bandages did not produce excoriation or cause inconvenience; in a few instances he had witnessed a return of the enlargement after the animal had been put to work, but generally the cure was permanent.

Mr. Gooch inquired if any gentleman present had used the pneumatic aspirator, to remove the fluid from serous sacs, and if so, with what results?

Mr. Low replied that he had experimented on a horse of his own, which had a very large serous sac in front of the knee, the fluid was easily removed, but it always accumulated again; at length he freely opened the sac which caused severe irritation, followed by inflammatory action, and ended by causing the death of the patient.

Mr. Overed in proposing a vote of thanks to the essayist for his valuable paper, took occasion to express the pleasure with which he witnessed the resuscitation of the Norfolk and Eastern Counties Veterinary Medical Association, which, although not actually dead, had been in a long and deep sleep, but, thanks to Mr. Santy

and a few other friends, their efforts to rouse the Society, and restore its animation had been fairly successful, of which they had proof in the meeting to day, which he hoped was an augury that a long period of usefulness, and real progress was before them. He trusted it would be the means of uniting in one strong and compact body, the scattered members of their profession in this part of the kingdom, and whilst promoting a more kindly feeling of mutual trust and confidence towards each other, also produce greater unanimity of opinion on all matters connected with their professional interests, and especially on the vexed question of examinations as to soundness. He felt that they were much indebted to Professor Pritchard for the interest he had shown in the Association by undertaking a special journey from town to be present at this meeting, which would be memorable as the first occasion on which the members had been honored by the presence of a Professor in their midst, whose able remarks had contributed much valuable information on the subject which Mr. Santy had introduced. He (Mr. O.) trusted that on a future occasion, we might again be favored with a visit from Mr. Pritchard, whose presence he was sure would be hailed with very great pleasure and satisfaction.

The motion was seconded by Mr. Augur, and carried with acclamation.

J. D. Overed, *Hon. Sec.*

We append to this Report the portion of Mr. Santy's essay in which he treats of the "Diseases of the Hock Joint."

"I will first notice those diseases which are more immediately connected with the soft structures, then those of the bones.

"The diseases common to the hock are Bog-Spavin, Thoroughpin, Capped Hock, Injuries to Gastrocnemii, Curb, and Bone Spavin.

"*Bog-Spavin* may be defined to be a soft, elastic, fluctuating tumour, of the nature of windgall growing upon the inner, upper and anterior part of the hock.

"Causes are such as produce windgall in general, to which may be added such as act on the hock in particular, divided into general and local, febrile rheumatic, and general dropsical affections. Locally, any excessive work or over-weight will have a tendency to stretch or strain this joint, these causes acting more upon the young than the adult animal. Intensity of motion, or any undue stress upon the hock joint, tends to create irritation, if not inflammation of its delicate membrane, the consequence being augmented secretion of synovia, producing what is termed bog spavin.

We not unfrequently find it in young animals that have never been worked, yearlings, and two-year-olds. This form of the disease I cannot think is the result of inflammation or irritation, but consider it as a kind of dropsical affection found in overgrown animals, and those loosely put together. There is an important difference between the pathology of bog spavin and windgall—that whilst the matter has a bursa for its seat, bog spavin consists in enlargement and saccular dilatation of the capsule of the joint itself; so that in a state of disease it may contain as much as two or three ounces of synovia, whilst in the normal condition it contains but from three to four drachms.

The termination of bog spavin in general is an accumulation of synovia, a thickening and strengthening of the sac, which may grow to a quarter of an inch in thickness, and frequently when in the young animal a total disappearance of the disease as it gains strength. This accounts for our very rarely finding lameness accompanying it; but sometimes disease proceeds further, and Percivall quotes some excellent remarks from Mr. Pritchard, of Wolverhampton, on the subject in the *Veterinarian* for January, 1849, in which he informs us he has discovered alterations to have taken place in the synovial fluid. The fluid, he says, becomes highly charged, first with cartilage, then with calcareous matter, and the whole tumour of hock becomes converted into ossific substance. Professor Williams calls this rheumatoid diathesis; he says common inflammation of a joint generally tends to ulceration and anchylosis; the rheumatoid, to calcification of the articular cartilage and synovial fringes.

Treatment of Bog Spavin, in that form in which we find it, in theyoung animal, gentle pressure, in the shape of a stimulating or mercurial flock charge, frequently repeated—that is, as often as possible,—with good living, is, in my opinion, the best means of reducing the disease and bringing the hocks to a normal condition. Where it is traceable to any of the before-mentioned causes, and there are symptoms of inflammation,rest, a high-heeled shoe, hot fomentations, cathartic medicine, afterwards pressure by spring truss, or compound iodine blisters, and the actual cautery, which in my experience is a very effectual remedy.

Blood Spavin, I will just mention, is a distended condition of vena saphena, caused by the pressure of a bursal or bony enlargement. I have never seen a case of varicose vein, although I believe it is stated some have actually existed.

Thorough Pin may be defined to be a bursal enlargement running from side to side through the upper and back part of the hock.

Causes.— The same as produce bog spavin, the young animal being more susceptable than the adult.

Pathology of Thorough Pin consists in a dropsical state of the sheath of the flexor pedis perforans. This may be termed true thorough pin, but Professors Williams and Percivall both state thorough pin may be in connection with bog spavin, that is, that the bursa of the flexor pedis perforans tendon may be distended from the overflow of synovia from the true hock joint, causing a fluctuating swelling that may be felt on either side of the hock, and which we term thorough pin. This cannot take place from the bursa to the true hock joints, on account of a cartilaginous disc, situated under the perforans tendon, which prevents the flow of synovia from the bursa.

Treatment.—The same as in bog spavin. I have seen the spring truss act well in some cases, in others they have grown larger; repeated blistering applications, a compound of Ung. Hyd. Biniod. and Ung. Canth. are often very successful in reducing thorough pin. I presume that these diseases are unsoundness only according to degree. Supposing a young animal is brought to us for examination, showing signs of bog spavin and thorough pin, I do not think we should be justified in passing it as sound, and certainly not if any symptoms of inflammatory action were present. As I have before stated, I have seen the disease quite disappear as the young animal gained strength; on the other hand, I have seen them get an immense size and totally unfit the animal for use. In the adult, where there is, as we often find, a swelling of a slight degree, both in the seat of bog spavin and thorough pin, if unaccompanied by any inflammatory symptoms or defect in action, I think we may pass them as sound.

Capped Hock may be defined to be a swelling or fulness on the point of the hock; Professor Williams gives two kinds—the synovial and the serous. He says, "The synovial appears as a tense fluctuating swelling, situated upon both sides of the point of the hock, the tendon of the gastrocnemius internus being posterior to the bursa, which prevents it from bulging backwards. It is an unsoundness causing lameness, and the formation of asbcess, from caries of necrosis of the summit of the os calcis; it has never been my lot to see such a diseased condition of the parts." The serous capped hock is a serous abcess, situated in the areolar tissue, between the tendon of the gastrocnemius internus and the skin.

Causes.—Any external injury, added to which it may be the sequel of constitutional or disease of other parts, but it then goes or comes according to the severity of those diseases.

Treatment of Capped Hock.—First remove the cause, if possible. When recent, the antiphlogistic is indicated, when all inflammatory action has disappeared and you have got rid of the

cause, preparations of iodine, &c. A stimulating application I have found very useful in the removal of immense capped hocks, reducing them to a minimum, is a compound of equal parts of acid carbolic, Ol. Lini. et Ol. Tinct., applied with friction once every day. It raises a thick scale, without disturbing the hair, and may be applied time after time for ten days or a fortnight, till the scale becomes so thick that it is useless applying it; then wait until it rises, and repeat as before.

We occasionally get injuries to the flexor metatarsi and the gastrocnemii tendons. On these diseases, gentlemen, I will refer you to Professor Williams' work on surgery.

Curb, as the public define it, is a swelling at the posterior part of the hock (as I have heard it defined in an Assize Court by a stableman, a bit of a knob at the back of the hock, and he added that he called it curb for shortness.) There is a difference of opinion amongst the best authorities, as to the real seat of curb; Professor Williams says it is sprain of the calcaneo cuboid ligament, and not the cellular tissue or annular ligament. Whoever is right, I think we may correctly follow the late professor Spooner, in stating that it is neither more nor less than sprain of the fibrous tissue at the posterior part of the hock; sickled hock most liable. It is congenital being found in foals.

Cause.—Any act that is calculated to give a sudden stretch or strain to the fibrous tissue; an unconscious movement; galloping over a heavy country is a very likely cause.

Treatment of Curb.—Rest, a high-heeled shoe, reduction of the inflammation, afterwards apply iodine or its compounds, the actual cautery; curbs of long standing being the remains of former disease, seldom cause lameness, and are considered by some not to be an unsoundness, but in my oqinion, in all cases where we can positively affirm there is a curb, the animal is legally unsound.

Bone Spavin.—Definition of most agreeable to my mind is Percival's—an exostosis of the hock, commonly located and detectable on its inner side, whereby bones, before moveable, become cemented and fixed together, and which is sometimes productive of caries of the articular surfaces of one or more of the joints of the hock. Why it should occur on the inside is that it is nearest the centre of gravity, and also from the arrangement of the cuneiform bones, when the hock is flexed the pressure is thrown on the inner side.

Causes.—Hereditary pre-disposition, peculiarity of conformation, ossific diathesis, growing and overgrown young horses, especially when in the breaker's hands. The local or exciting causes are sprains of the ligaments, more particularly the interosseous; some say concussion of the bones. Professor Fearnley says spavin is caused by concussion, but it is the concussion o

extreme flexion, and this he says is why we find it most in horses that have the most hock action, and are so bent as to admit of extreme flexion; he denies that the square and straight hock is often the subject of it. Percivall's theory is directly the opposite of this. I must confess that the form of the hock has not much entered my mind; during the examination of them my principal idea has been to enable myself to state whether disease existed or not.

The Detection of Spavin—the mode of—must be left to each examiner, for you will hardly see two examine alike. Professor Fearnley condemns looking for them, and I have heard an army veterinary surgeon state that we ought to be able to tell a spavin by being led blindfold to one hock. We might in some cases, but in the cases that are the cause of dispute I am afraid we should often be at fault. My own idea is that we require to make use of the sense of sight as well as touch, and thoroughly examine the one hock in comparison with the other, for I have yet to learn that you get such a marked difference in the development without disease. We hear a great deal about the finding or feeling the fissures between the bones. We are able to do this to a certain extent, but when the hock is covered by ligamentous tissue and the common integument, we cannot so easily detect disease, or rather be able to state there is a total absence of it, as some would have us believe, especially in the ulcerative form. It is possible for this form of the disease, the ulcerative, to be going on without any other apparent symptom than lameness. If not acute, a decided defect in the action or flexion of the hock, and exostosis become developed after a lengthened time, perhaps subsequent to treatment of various kinds.

Treatment of Bone Spavin.—To veterinary surgeons I am not aware that I can say anything with regard to it which they do not already know. Counter irritation in some form seems to be the leading principle; blisters, the prepartions of iodine and cantharides, setons, periosteotomy, also what is known by the term causticking, which has been performed with great success by the late Mr. Samuel Fisher, of Stamford, Lincolnshire, and also by Mr. Fryer, of Kirby Fleetham, Yorkshire. Since my residence in Norwich I have tried it on three cases, two with perfect success, one a five-year-old horse, the property of the late T. Edwards, Esq., of Keswick, Norwich; two this year, one the property of a surgeon in the city, a five-year-old horse, very lame, had been blistered; the former animal also was very lame, but became sound and remained so at work until sold and lost sight of; the latter was operated on March 12th. Six weeks after it was sound, but had an iodine blister applied to both hocks, mostly with the idea of causing absorption of the swelling produced by the opera-

tion, it was put to work about the 1st of June, and has been going sound since. The third case, a four-year-old pony, about 14hh., had been used for harness work, very lame of both hocks, more especially of the off one, great enlargement in the seat of spavin; operated on March 5th, had an iodine blister applied six weeks after, put to harness work about the beginning of June, is working to-day with only a slight defect in the action. I think in cases of hock lameness this remedy is worthy of more extensive trial, it leaves very little blemish, and the results, as far as I can speak, are satisfactory.

The mode, as I am acquainted with it, is as follows :—The animal being cast, make a clean, straight, and bold incision through the skin and areolar tissue, from above downwards, just below the seat of spavin, in the triangular-like space formed by the vena saphena, then take a probe-pointed seton needle and raise the skin by working the needle over the spavin backwards and forwards into a pear-shaped space, your incision of course being the apex ; then insert tightly some pledgets of tow, or a long piece of thick cotton, saturated with any preparation the operator may think best—some, I believe, use a solution of nitrate of silver. The medicament I have used has been as given by Professor Fearnley—equal parts of oil of turpentine, oil of cantharides, and oil of thyme. Place as much of the tow or cotton as can be got into the wound, being sure to leave sufficient hanging out to get hold of ; let it remain in for 48 or 72 hours, then withdraw, when there will be a copious discharge. The hocks require no treatment beyond a little fomentation with warm water about ten minutes once a day for a few days; give rest for three months ; in some cases I apply an iodine blister about six weeks after the operation.

Firing, which may be done in two ways, the line or puncturing, or combined. I like the puncture firing, and have in some cases punctured quite into the exostosis with good results, applying a blister directly afterwards. In splint it frequently cures without further trouble.

Gentlemen,—Bone spavin is to me the principal and most important question in this paper, and the one, I think, which we, as members of a scientific profession, find most difficulty in arriving at a satisfactory solution. I sincerely trust that the discussion which may follow this reading will enable us to lay down some law, if only to be understood locally (that is, in the county) which will allow us individually to assert that such a hock is the subject of the above disease, with a reasonable belief that it will be pronounced so by our professional neighbours. Professor Williams says that bone spavin is a very common cause of lameness and consequent unsoundness, and it is of importance that a veterinary surgeon be a good judge of a hock, for what may be a spavin in

one hock may be a mere conformation in another. True, but does the Professor mean the hocks of the same horse? I take it for granted that he means hocks of different animals. This seems to me to contain the whole pith and substance of the subject. Can we, can any member of the profession, be absolutely certain in giving his opinion that he is right in stating that such a hock, although there is an enlargement in the seat of spavin, it is only the natural or peculiar conformation, and that no disease exists; or, on the other hand, be able to state with equal confidence that such an enlargement is, or such a hock is the seat of bone spavin? The latter, I think, there is a good reason for saying we can; the former, I think, is often a very doubtful matter. It is a very simple thing to take hold of a properly-prepared specimen and give a correct opinion as to whether there is a spavin or the absence of it; but in the living animal it is a more delicate matter to truthfully decide if either or both hocks have bone spavin. Of course, where there is exostosis existing to the size of a walnut any tyro can see and tell you the horse has a spavin; but I am speaking of a case that is open to dispute where there is a difference in the formation and feel of the two hocks of the same animal. If we have one hock decidedly larger than the other in the seat of spavin it is my opinion that in nine cases out of ten we should find on dissection that such hock was the seat of disease, and those I have dissected have proved it to be so. Therefore I submit to this association, and I am sure that some very practical and respected members of it will coincide with me that in all cases where we have one hock larger in the seat of spavin, where there is no difficulty to an unprejudiced member, or even any person of good observation, in stating such to be the case, that we should not be justified in passing such an animal as legally sound; in fact that we ought to condemn it as being unsound.

There are many of these cases which we pronounce unsound from bony enlargement of one hock that do not go lame, or so lame as to be brought under our notice professionally, because they are not half tried by severe leaping, draft, &c.; and, again, there are many horses going lame in this city from disease of the hocks, that if you told their owners they were so, you would be put down for something worse than a fool; so that these cases, examined, and pronounced unsound, rarely or ever give us the opportunity of demonstrating them to be so by actual lameness or by dissection. Again, with respect to lameness, of course age of animal, age of, and position of spavin, have much to do with it. If we get exostosis upon the cuneiform bones, or head of small metatarsal bone, without involving the articulatory surface, we certainly should have disease and enlargement, but if the process was cut short there, it is possible not to have lameness. Gentle-

men, if we are examining a horse for ourselves, or for a friend for practical purposes, or for a client who states such to us, that he wishes to know, to the best of our belief, if the animal is serviceably sound, then, in my opinion, we are justified in waiving a great many of the nice little objections that the law, in its present state, bids us take account of; for I must admit that I have known many horses with odd hocks that I would not pass as sound animals continue to go so for several years; but on the other hand, if a horse is brought to us to be examined as to soundness, our client wants one or other of the two simple words, yes, or no, let the responsibility of either of them stare us in the face.

Speaking of the hock, it is not a question of what the horse has been or may become, it is a question of reality—What is his condition now? We ought to ask ourselves can we honestly and conscientiously, and without fear of what any member of the profession may say to the contrary, declare such a hock to be sound or unsound as the case may be; has he one hock larger than the other in the seat of spavin, and from what cause, if so, are we to reject him as being unsound, or is it to be left to the judgment or caprice of each individual member? If so, then I think there ought to be an end of examinations as to legal unsoundness; let every member simply give his opinion as he best thinks fit, and own that we as a body have no line to go by, that most is haphazard according to circumstances which bear on each man's mind. It is probable that Mr. A. and Mr. B. will pass an animal whilst Mr. C. will reject him, or *vice versâ*.

Gentlemen, I have trespassed too long on your time. In conclusion, I will say that as far as I am concerned, and until I have reason to alter my ideas, in the examination on horses as to soundness with respect to bone spavin, if a horse was brought to me with hocks both alike in the seat of spavin, although prominent, showing no signs of lameness, using or flexing them well, such a horse I would pass as sound; but should I be able to say without fear of contradiction that one hock was larger in the seat of spavin than the other, although the animal at the time showed no signs of lameness, as I have before stated, I should consider such a hock to be diseased, and consequently should reject him as being unsound.

GLASGOW VETERINARY COLLEGE.

The summer session of this Institution terminated on Friday, July 19th, and on Monday, the 22nd, the examinations for the Diploma of the Royal College of Veterinary Surgeons were conducted within the Museum of the College. The board of

examiners included the following gentlemen :—Professor Alex. Crum Brown, University, Edinburgh ; Professor Alex. Dickson, M.D., University, Glasgow ; Dr. Dunsmure, Edinburgh. The following gentlemen were also present as ex-officio members—viz., Principal M'Call, F.R.C.V.S. ; Professors Knox, M.A., M.B. ; D. M'Gill, M.R.C.V.S. ; Stephen Cooke, F.C.S. ; and James Macqueen, M.R.C.V.S., Glasgow Veterinary College. Twenty-three students presented themselves for the first professional examination, and of the number 21 were successful in passing a highly creditable examination. Medals, granted by the Highland and Agricultural Society of Scotland, and Certificates of merit, granted by the College, were awarded in the different branches of study as follows :—

Materia Medica, Therapeutics, and Pharmacy—Medallist, Mr. Harry Mountney, Hill Somersal, Derbyshire ; 1st class certificates, Mr. James Wyper, Glasgow ; Mr. Robert Glass, Glasgow ; 2nd do. Mr. John Smith, Ulverstone, Lancashire ; and Mr. Hugh Bradley, Newry, County Down, Ireland. Chemistry—Medallist, Mr. James Wyper, Glasgow ; 1st class certificates, Mr. Wm. Stevenson. Howood, Renfrewshire; Mr. Thomas Bowrie, Kildarchan, Renfrew, shire ; Mr. Thomas Douglas, Fenwick, Ayrshire ; 2nd do., Mr. Hugh Bradley ; Mr. Allan Pollock Blue, Mearns, Renfrewshire. Botany—Medallist, Mr. A. P. Blue ; 1st class certificates, Mr. Thomas Douglas and Mr. Wm. Stevenson ; 2nd do., Mr. Thomas Bowie, and Mr. Wm. Stewart, Glasgow.

Immediately after the examination the students assembled in the lecture-room, under the presidency of Principal M'Call, when Mr. Glass, in a graceful and appropriate speech on behalf of his fellow-students, presented Professor Macqueen with a case of valuable professional instruments as a mark of their appreciation of his ability and merit as Lecturer on Materia Medica.

NEW MEMBERS OF THE PROFESSION.

At a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held July 2nd, the following students from the Royal Veterinary College received their Diploma, and were admitted members of the profession :—

Mr. John Burke Savage . .	Newry, County Down, Ireland.
— William Markham . .	Rugeley, Staffordshire.
— John Rose	Much Wenlock, Shropshire.
— George Fowler . . .	Greenwich, Kent.
— John Square Brunskill .	Buckland, Devon.
— Charles Henry Betser .	Steyning, Sussex.

The following students passed their SECOND EXAMINATION, at the meeting of the Court of Examiners on July 3rd.

Mr. James Ingham.
— Ernest Edwin Batt.
— Herbert Hall.
Mr. John Soulsby.
— William Roach.
— Wm. Hastings Farrow.

Mr. Thomas John Keech.

The following passed their FIRST EXAMINATION, at the meetings of the Court of Examiners, held July 4th, 5th, 6th, 8th, and 9th.

Mr. Harry Chrichley Talbott.
— Herbert Alfred Towlson.
— Walter Francis Day.
— John Bush Hart.
— Stephen Marsh Smith.
— Thomas William Cave.
— Frederick Leeds Gooch.
— Johnson Wm. Carlisle.
— Wm. Francis Mulcahy.
— Arthur Wm. Briggs.
— Geo. Richard Griffith.
— Donald Gregory.
— Thos. Jarvis Rippon.
— Geo. Henry West.
— Thomas Skilton.
— Arthur Samuel Auger.
— Harry Martin Rule.
— Ernest Robt. Harding.
— John Owen.
Mr. Frederick Wm. Whitney.
— Wm. Frederick Garside.
— John Darby.
— Henry Thos. W. Mann.
— George Deveson.
— Theodore Charles Toop.
— Sidney Villar.
— Fred. Francis Woolcott.
— Alfred Harris.
— William Caudwell.
— Edward Harry Wand.
— Charles Taylor.
— Thos. Wm. Lepper.
— Enoch Green.
— Robert Joseph Dawson.
— John Kirby Pilkington.
— Henry Keyes.
— Edward Percival Smith.
— George Rees.

At a meeting of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh, on July 18th, the following students from the New Veterinary College, Edinburgh, received their Diploma, and were admitted members of the profession:—

Mr. Richard Ellis. . . . . Liverpool.
— Josiah Simpson Walker. . . Kendal.
— Albert Inkerman Douglas Drake. Edinburgh.
— Richard William Tinsley. . . Malton.
— Henry Surmon. . . . . London.
— George Edward Milton. . . Stockbridge, Hants.
— Harry Low . . . . . Norwich.

At the several meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow, on July 16th, 17th, 18th, and 22nd, the following students passed their FIRST EXAMINATION:—

EDINBURGH VETERINARY COLLEGE.

Mr. William Hill.
— Johnson Gibbins.
— Hugh Qwynn Lloyd.
— John Taggart.
— Joseph Donald.
— David Doig.
— Christopher Black.
— William Calvert.
Mr. Joseph Woods.
— Peter Manuel.
— John Ward.
— William Ryan.
— Robert Levie.
— Thomas Graham Nairne.
— George Rogerson.
— Thomas King.

EDINBURGH NEW VETERINARY COLLEGE.

Mr. George Whitehead.
— Metcalf Smith.
— William Livock.
— George Edward Nash.
— Alfred Moritz Michaelis.
— Harry Hunt.
— Archibald Munro.
— William Summers
— James Chalmers.
— James Fraser.
— John Fisher Thompson.
Mr. John Aitken.
— William Edward Smith Richmond.
— James Welsh Canty.
— James Joseph Mullally.
— Arthur Joseph Dobbyn.
— Thomas Oldfield.
— John Richard Simpson.
— Wm. Owen Williams.
— Frederick Jas. Richmond.
— Thomas Caldicott.

GLASGOW VETERINARY COLLEGE.

Mr. Robert Glass.
— Jas. Morton Howatt.
— Thos. Anderson Douglas.
— William Stewart.
— John Smith.
— John Wright.
— Hugh Bradley.
— Henry Mountney.
— Alexander Milligan.
— James Wyper.
— Ebenezer Brown McLeay.
Mr. William Stevenson.
— Robert Stevenson.
— George Pollock.
— Amyas Llewellyn Appgriffith Heard.
— Allan Pollock Blue.
— William Wallace.
— Hugh McKenzie.
— James Nisbet.
— James Murphy.
— Thomas Bowie.

Veterinary Jurisprudence

VIOLATION OF CATTLE IMPORT REGULATIONS.

AT the West Hartlepool County Petty Sessions on Monday, July 22nd, Mr. James Spence, butcher, of Hartlepool, was charged with committing a breach of the cattle regulations by having on May 30th, slaughtered thirty head of sheep which had arrived at that port from Schleswig-Holstein without having first been examined by the Government inspector (Mr. Henry Peel).

Mr. Herbert Belk prosecuted on behalf of the Privy Council.

The prosecution showed that the sheep arrived by the steamship German Empire, being part of a consignment of 200, and were landed at 2·30 p.m., when they should have been examined

by Mr. Peele; but that gentleman, according to the statement of Mr. Spence, was not at home, and as he wished to send the sheep to Manchester market, he had them slaughtered without awaiting Mr. Peel's certificate.

Their worships imposed a penalty of 10s. per head, or a total fine of £15.—*Live Stock Journal.*

DISHORNING CATTLE.

An important criminal action was brought in the Sheriff Court, Banff, on Saturday, July 20th. William Stuart, cattle dealer, Keith, was charged with three separate acts of cruelty to cattle. It was set forth that in contravention of the Act for the Prevention of Cruelty to Animals, he had, on 18th June, at Old Newmills, Keith, cruelly ill-treated two stirks by cutting off, with a saw or other instrument, at or near their roots, from the heads of the stirks, the horns and flints or bones thereof, and plugging the orifices with cork, and applying a quantity of rosin, and heated iron to the part.

On the 20th June, in a court in Moss Street, Keith, he did the same thing to six steers; and, on 21st June, at Cuthill fen lands, Keith, he similarly treated six steers. Stuart pleaded guilty.

Mr. Kelman, solicitor, on his behalf, explained that Stuart was a considerable cattle dealer, and a number of Irish cattle coming into his hands, he had resorted to a common practice by those, especially in Ireland, dealing in such cattle, of removing their horns. That course was necessary in consequence of Mr. Stuart's disposition of his cattle in open courts during winter, where they could not be left with their horns on. Mr. Stuart thought he was justified in the practice by a decision of the Sheriff at Stonehaven, a report of which was handed to the Sheriff.

Sheriff Scott Moncrieff said he hoped the charge to which the accused had pleaded guilty was very rare in this part of the country. It was of a very objectionable nature, and which, so long as he was on the bench, he should repress with the utmost rigour. He imposed a penalty of 30s., being 10s. for each statutory charge, or fourteen days' imprisonment. The fine was paid.

PARLIAMENTARY INTELLIGENCE.

INOCULATION OF CATTLE FOR PLEURO-PNEUMONIA.

House of Commons.—*Monday, July 15th.*

Sir P. O'Brien asked the Secretary to the Treasury whether his attention had been directed to the success attendant upon the inoculation of cattle at Campbeltown, in Argyllshire, and elsewhere, in preventing the spread of pleuro-pneumonia; and whether he would consider the expediency of introducing a clause in the Cattle Bill rendering such inoculation compulsory.

Sir H. Selwyn Ibbetson said that experiments in the inocu-

lation of cattle had been made for many years past, and although there were some instances in which they had proved successful, the result had not been so generally successful as to render inoculation at all certain. Under the circumstances the Government were not prepared to introduce a clause into the Cattle Bill to render inoculation compulsory.

ROYAL VETERINARY COLLEGE PRIZE AWARDS.

SCHOLARSHIP.

The Governors of the Royal Veterinary College, at their meeting on July 8th, awarded the scholarship of £25 *per annum*, for two years, to Mr. Sidney Villar, of Staplegrove, Devon.

The competition was a spirited one, and the position attained by three of the other candidates reflected much credit upon them, both with regard to their educational and professional attainments.

COLEMAN PRIZE.

At the same meeting of the Governors, the Coleman Silver Medal was awarded to Mr. John Richard Carless, Stoke-upon-Trent.

Bronze Medal to Mr. Richard Page Bull, of Tysoe.

Certificate of Merit to Mr. Frederick William Day, of Tewkesbury.

THE FITZWYGRAM PRIZES.

The notices and regulations relative to the above prizes were duly advertised in "the veterinary journals," and notices issued to graduates of the Royal College of Veterinary Surgeons who had obtained their diplomas since May, 1877, also to the students of the respective veterinary schools.

The Examiners appointed were Dr. Wm. Craig, Lothian Road, Edinburgh; Mr. Thos. Taylor, F.R.C.V.S., Grosvenor Street, Manchester; and Mr. Archibald Robinson, M.R.C.V.S., Greenock.

The superintendent was the secretary of the R.C.V.S.

Only two candidates entered their names on the list, both of whom were from the Royal Veterinary College, and members of the Royal College of Veterinary Surgeons.

The written examination took place at the Royal College of Veterinary Surgeons, on June 13th, and the *vivâ voce* examination on the 15th at "the Brown Institution."

The following is the result, and the number of marks obtained by the two competitors.

Nos.	Anatomy. 300	Physiology. 300	Pathology. 300	Chemistry. 100	Materia Med. 125	Botany. 75	Total.
41	208	242	185	55	107	33	830
49	164	118	72	52	77	20	503

The Examiners on Physiology and Histology reported on No. 41, that the whole of the answers in the paper were very creditable and clear; that on Pathology showed a deficiency in practical knowledge; while that on No. 49 was nil on both subjects.

Both competitors underwent the *vivâ voce* examination which took place at "the Brown Institution."

The *vivâ voce* and practical examination for which 600 marks were assigned, were as follows:

Nos.	Diagnosis of Disease. 200	Shoeing. 100	Examination for Soundness. 200	Selection of Horses for Specific Purposes. 100	Total.
41	115	40	105	61	321
49	80	55	90	60	285

Both competitors were reported as deficient on all practical subjects, and in the diagnosis of disease and soundness.

The competitors having failed in obtaining the requisite number of marks, no award was given for the above prizes, but the donor presented to each candidate, the sum of £10 for travelling expenses.

WM. HENRY COATES, *Secretary*.

ANATOMY.

Marks.

I. Describe the testicle of the horse, its situation, coverings, and structure. By what artery is it supplied? Has this artery any distinctive feature, and of what is it a branch? Give the name, origin, and description of nerve by which it is supplied. 60

II. Describe the internal ear and the distribution of the auditory nerve in the labyrinth? 45

III. What are the guttural pouches, and with what do they communicate? Describe their relation. In what animal are they found? 40

IV. Describe the kidney of the horse and its structure. . 40

V. Describe the form, structure, attachments, relation and function of the diaphragm, and name of the openings in it, and what passes through each opening? 45

VI. What is the physical difference between the cervical and dorsal portions of the sympathetic? 15

VII. Of what is the umbilical artery in the fœtus a branch and what becomes of it in adult life? 10

VIII. Describe the origin of the par vagum, give its relation in the cervical region and enumerate its branches . 35

IX. Describe the origin of the first pair of cranial nerves. 10

300

Marks.

Questions in Physiology.

I. Describe white and yellow Fibrous connective tissues.—Where is each kind found? 35

II. Describe a transverse section of the Spinal Cord taken (say) in the dorsal region: What do you know of the connection of nerve cells and nerve fibres? 35

III. Describe the phenomena of a complete Cardiac Beat, and state what the sounds of the heart are probably due to . 35

IV. What do you understand by the "tonus" of arteries? How is it maintained? and what is its use? . . . 35

V. Describe a lobule of the Lung, and explain the changes that occur in the Blood and in the air of a lobule. . . 30

VI. Upon what classes of food does the Gastric juice act? What is the constitution of Gastric juice? and what is the nature of the products of its action? 50

VII. Describe the arrangement of blood-vessels in the liver. What is the nature and function of bile? . . 50

VIII. How does the eye alter to accommodate itself to objects close to and far from the Eye? 30

300

Pathology and Morbid Anatomy.

I. Give the natural temperature of the horse, ox, and dog, also the natural pulse per minute each. 10

II. In which of the domesticated animals does foreign body in the heart most frequently occur? Give the symptoms induced by it, the treatment you would advise, and the post-mortem appearances. 35

III. Describe the symptoms and give the names of the different varieties of tetanus, and the portions of the body effected in each. Why should the mouth not be open instead of closed in trismus? What are the causes of tetanus, and what name is given to it when the cause is known, and what when unknown? 40

IV. What is erysipelas, and what forms of it are seen in the horse? 10

V. What symptoms would you expect from embolism of the external illiac of one side (in the horse), and what means would you take to convince yourself of its existence? . 35

VI. What changes of structure take place in caries and what in necrosis? 25

VII. What is the difference between true and false aneurism? also, what is the difference between a varicose aneurism and an aneurismal varix. 25

VIII. What is thrombosis? What are its results? When is it necessary that thrombosis should take place for the preservation of life? and in what case may there be an exception. 35

IX. State under what circumstances a blood clot forms in the heart during the last moments of life? How would

Marks.

you distinguish it from a thrombus of gradual formation, and from a post-mortem clot? 40

X. In what way is the infective material in pyæmi aproduced, what organisms are present, how many varieties, and which seem to be the most active? What is the difference between pyæmia and septicæmia? 45

300

Chemistry.

Time allowed—One hour and a half.

I. Mention the chief properties of hydrogen, and explain the process for preparing it. 5

II. What weight of nitric acid can be obtained from 100 lbs. of nitrate of potassium, and of nitrate of sodium, respectively, K=39·1. Na.=23 20

III. Give the formula for Nitrogen Monoxide (nitrous oxide). Explain how it is prepared, giving chemical equations, and state its physical and physiological properties. . 20

IV. Distinguish beiween mercurious and mercuric salts, by (*a*) caustic potash, (*b*) ammonia, and (*c*) iodide of potassium. Mention the precipitates formed in each case, their appearances and chemical formula. . . . .

V. Describe the process for detecting arsenic in the stomach of an animal poisoned with arsenious acid . . 20

100

Materia Medica.

Time allowed—one hour and a half.

I. Explain the actions of Diuretics. Mention the principal ones used in veterinary practice, and state the chief purposes for which they are administered. . . . 20

II. Mention the plants which yield mustard, and the natural order to which they belong. Explain clearly on what the activity of mustard depends. and state the actions and uses of mustard. 20

III. Mention the chief preparations of lead used in veterinary medicine. Give their actions and uses, the symptoms of lead poisoning and the proper antidote. . . . 20

IV. Mention the plants which yield colchicum; its natural order, and the parts of the plants used in medicines. Give the actions and uses of colchicum. . . . 20

V. Mention the two principal alkaloids found in nux vomica, and how to distinguish them. State the actions and uses of nux vomica. 25

VI. What is Ergot? On what plant is it generally found? Describe its actions and uses. . . . 20

125

Marks.

BOTANY.

Time allowed—one hour and a half.

I. Describe the parts of the fruit *Cherry*, and how does it differ from that of the Coconut. 5

II. Describe a fertilised orthotropal ovule. . . 10

III. Describe the parts of fructification of a *Moss*. . 10

IV. Describe what is seen in a *transverse* section of an exogenous stem from the centre to the circumference. . 15

V. Distinguish between *Lobium and Triticum*. . . 15

VI. State the points of difference and agreement between the Natural Orders Papaveraceæ and Cruciferæ . . 10

VIII. Place in their Natural Orders the following plants —Aconite, Turnip, Chickweed, Apple, Cherry-Laurel, Clover, Hemlock, Carrot, Thistle, Mint, Foxglove, Tobacco, Dock, Yew, Colchicum, Squill, Sedge, Rush, Sugar-cane, Rye. . 10

75

APPOINTMENT OF AN ASSISTANT DEMONSTRATOR.

We have the pleasure to announce that Mr. Edward Lyne Dixson, of Margate, who obtained his Diploma in April last, has been appointed Assistant Demonstrator of Anatomy at the Royal Veterinary College.

OBITUARY.

WE deeply regret to have to record the death of Mr. Wm. Smith, F.R.C.V.S., Norwich, on July 4th after a short illness. Mr. Smith had long been resident in the City, and among other public appointments held that of Inspector of the Cattle Market, under the Corporation. He leaves behind him a large circle of friends to lament his loss. His diploma bears date February 9th, 1837.

To this we have to add the death of

Mr. Daniel H. Tombs, M.R.C.V.S., late of Barford, Gloucester, at the early age of 27 years. His diploma bears date April 19th, 1871.

Mr. Wm. Elam, M.R.C.V.S., Taylor Street, Liverpool. His diploma bears date April 27th, 1846.

Also, Mr. John Miscamble, M.R.C.V.S., Melbourne, Australia. His diploma bears date April 23rd, 1845.

THE

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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By John Henry Steel, Demonstrator of Anatomy at the Royal Veterinary College.

While the "Exposition Universelle" is attracting visitors from all parts of the civilised world to Paris, our professional brethren in the French capital have determined to hold a *congrès national vétérinaire*. We are sure all members of the veterinary profession will look forward with pleasure to this event, for much valuable information must result from the interchange of professional opinions by the celebrated men who adorn the French schools, and by the not less celebrated practitioners with whose names their contributions to numerous scientific periodicals render us familiar. We extract from the *Journal de Médicine Vétérinaire et de Zootechnie* the following account of the order of sittings as arranged by the Committee of Organisation:—

"September 8th and 9th.—These two days will be devoted to the study of the first question of the programme, which is thus worded: 'To study the best means of improving the position of private (*civils*) veterinary practitioners in France.'

"10th.—To study some better method of organisation of the sanitary service, and the means of insuring its execution.

11th.—Consideration of the part veterinary surgeons

should hold in the inspection of fairs, markets, slaughter-houses, and knackers'-yards, as well as in election conclaves and committees of assessment (*Jurys de Concours et les Commissions de Recensement*).

"12th.—Consideration of conditions of admission into veterinary schools and the modifications of which the course of instruction at the same would admit.

"13th.—Study of the question of 'veterinary associations in France.'

"14th and 15th.—Examination of the state of the law with regard to warranty and contagious diseases."

"The inauguration of the statue of CLAUDE BOURGELAT at the Alfort school will occur during the period of the congress on a day which will be announced at the opening meeting."

"The committee has considered that it would be advantageous, to ensure order at the deliberations, that those members who desire to speak upon any of the questions on the programme will be good enough to give notice before 25th August to the secretary of the committee, M. Rossignol, Vétérinaire à Melun (Seine-et-Marne)."

"Also it has been decided to limit to twenty minutes the length of time which will be allowed to each speaker for the statement of his views on each question."

"Since the duration of the congress cannot exceed eight days, the restriction imposed upon the time to be occupied in speaking and in reading papers is absolutely necessary, in order that a great number of members may take take part in the discussions."

It may be well for English veterinarians to consider how "they do these things in France." We feel sure all will agree with us that such a congress would not be without value in this country; that it would serve to unite into one compact organism the variously useful members of our profession, and would assist in securing for us that recognition as a profession which we are slowly gaining from the state and from the public. There is a likelihood of a large agricultural exhibition in London next year, and this being to us a matter of great professional interest might impart additional importance to a large veterinary conclave. And in reference to the proposed exhibition we may with advantage read the observations of M. BOULEY as extracted from the *Recueil de Médécine Vétérinaire*: "The international collection of living animals has been opened at the Exhibition by that of animals for the meat market, on the *Esplanade des Invalides*. The Minister of Agriculture having done me

the honour to name me president of the jury, I have attempted to point out by some hints the character of this concourse, where one can see side by side types from the different countries of Europe, almost all improved by culture (*méthodes zootechinques*), and giving demonstration of the uniformity of results which these methods are capable of producing wherever they are applied—uniformity, however, not of such a kind but that the fitness of different races remains apparent and perfectly characteristic. Among the industries which agriculture comprehends, that of the production of our food animals is one of the most important, and the one which the most testifies what the will of man directed by intelligence can do in laying hold of one of the forces of nature, and making it contribute to the satisfaction of his interests. If the work accomplished in this line does not seem as if it brings so much honour to the men who have brought it to its present stage of advancement as that of mechanics and of artificers, it is because the materials used by the latter show in a more visible manner the mark of their work than does the matter of living organisms which the improver has, so to speak, refashioned, and modelled on new principles, to adapt them, better than when they are in a state of nature, to the uses and wants of mankind. Those who are not initiated into the secrets and the difficulties of this high class of industry cannot appreciate, on viewing the results, the efforts of genius they have cost the great improvers who, first, have conceived and executed that reform of the works of natnre. Nor can they appreciate how that reform, ceaselessly pursued by their successors and their followers, implies accuracy of eye, of attention, of perseverance, and of fitness to preserve the works acquired and to continue to advance them nearer perfection. The force of nature, of which man ought to take advantage in this matter, and which he ought, so to speak, to direct according to his conceptions and ideas, is the force, *Life*, otherwise it is light, heat, electricity, gravitation. He must command the movements of this force, *life*, he must counteract its original impulses, he must arrange it anew in the design of his plan, constituting himself a modifier and a reformer of nature. It is thus the industry of the producer refashions the animals of the creation, and of them makes beings which we may almost call 'fanciful' (*chimériques*), so different are they often in their form and in their fresh tendencies from those of their race which remain in a state of nature.

"But if nature consents to yield and to allow herself to be subdued, it is only on one condition, you must know, gen-

tlemen, it is that the effort which constrains her is never relaxed, for the organism is only bent, so to speak, always ready to straighten itself, and to cause the primitive type to reappear when the controlling action of man has ceased to make itself felt. Thus these conquests over nature are somewhat ephemeral, the economic races which man has the power of creating survive, and are maintained only by him in an accidental form, and with the fitness which he has given them, which we may call 'excessive.' But this very instability shows only more prominently how deserving is that work accomplished against nature by making use of her own secrets against her, secrets exposed by power of observation, or, for it is the same thing, by genius.

"The exhibition to-day shows us, in almost all the races, and in almost all the productions, the efforts of man to modify the primitive type, and the better to adapt them by refashionment to our uses and our needs. The country whence originated this great movement shows itself in every respect equal to itself in its remarkable productions, but England, to whom belongs the glory of the discovery, now finds rivals in the pupils she has made, and her methods allow in every country those who adopt them and who adhere to them under conditions even moderately favourable, to imitate and even to equal her. The exhibition before us bears abundant witness of this.

"The exhibition shows us not only animals which we have a right to call 'perfect,' considering them in relation to our wants, but also other productions in which the work of nature remains almost intact. There is here a happy contrast which will not fail, no doubt, to strike the public, and which bears its lesson. It will cause better appreciation, by the differences presented, of the value resulting from the application of the great methods which the leaders have discovered and taught by their examples, and of the insufficiency of the results when the work remains almost solely the work of nature. Another lesson and a more interesting one still results from our exhibition. It allows us to compare together the races of different countries, and, for some of these countries, those which are peculiar to them, and we can thus see that if, almost everywhere, the improvers have known how to make use of new methods of improvement of their animals, most have done it only in the particular degree that local circumstances have compelled them to observe. Thus our races, for example, not to speak of others, while carrying the manifest imprint, of the intervention in their rearing of methods of improvement, are marked

with the different aptitudes and characters which they owe to their imperfection. And if they are different from their fellows by happy modifications of which they give proof, they remain similar to them by their adaptation to the circumstances which surround them and on which they are essentially dependent. Happy solution of the problem, which causes agreement between the new practices and the necessities of things, and allows us to benefit some without violating others."

We shall look forward with much interest to the report of judges under the presidency of a man who so well appreciates the value of an exhibition of this kind to the student of artificial selection.

The *Echo Vétérinaire Belge* contains an account of a surgical operation in a by no means unfrequent condition, which, by its boldness, serves to astonish us. It is by M. E. Bastin. He says, after introductory remarks: "On the 9th June, 1876, Mr. Louis Russel, of Lamontzee, called me in to attend a milch cow aged five years. For some days this animal had not fed well, rumination had been irregular, and a frequent cough was noticeable. Pulse accelerated, jugulars distended, and the head often stretched on the chest in a position which denoted much pain. I diagnosed traumatic carditis. The cow being poor, I proposed to the owner to try an operation, severe it is true, but which in case of success would save the animal from imminent death. I also drew attention to the fact that even if any accident happened during the operation, it would still be possible to slaughter the patient for the butcher. After some hesitation, he consented, and I commenced the operation. An assistant held the left fore limb much advanced, to expose as much as possible of the costal surface corresponding to the heart. I drew the skin rapidly to one side, and made an incision from above downwards in the intercostal space, at that level where I most clearly felt the heart's beats. Wrapping my hand in a cloth on which cold water continually played, I introduced the second finger into the wound, and on reaching the pleura I made an opening with the finger-nail, and immediately introduced the finger. I tore this membrane from above downwards so that I could introduce the whole hand. Then I plainly felt the beats of heart on the other side of the pericardium; there was no need to open that membrane, for, after some manipulation, I felt the point of a foreign body. I immediately introduced forceps with great care, and so removed a long needle from the heart of the cow. Immediately I withdrew the hand,

together with the cloth around it, which served to cover up the wound as soon as it had been removed. The skin returning to its position covered the opening in the pleura. A suture introduced served to completely close it. During the operation, which was done suddenly, the cow only showed spasmodic movements of the head, movements above all evident during the short time when I had the fingers in contact with the heart. The animal remained for some days indisposed, an œdematous swelling formed at the seat of operation. I had cold water continually applied on the affected part, and at the end of from ten to twelve days of an appropriate treatment the animal no longer showed signs of the disease. The owner sold her three months afterwards for the butcher."

This experiment seems worthy of repetition, and we congratulate M. Bastin on the success his skill deserved. We may remark the prominence he gives to the application of cold water to the parts during and subsequent to the operation. In the *Recueil de Médécine Vétérinaire* for 15th July, M. Bouley's valuable *chronique* draws our attention to a communication from M. Picheney, of the French army, on which he remarks:—"M. Picheney's observations are very confirmatory of the efficacy of cold water, employed in continuous irrigation, to cause the reduction of even chronic ventral herniæ and cicatrisation of the wound of the ventral walls. From these cases, as well as from other methods of treatment, it seems that the essential condition for obliteration of the opening under the skin through which the intestine protrudes is, that the distending action of the herniated intestine should be overcome. Whether we make the intestine re-enter the abdominal cavity by subcutaneous œdema, as in Dayot's operation, or by closure of the sac, as when we have recourse to ligature, or by the application of a truss, as M. Chuchu has done, in all cases the intestine is forced from the hernial opening. An important part in the formation of the cicatrix has been attributed to the intervention of accidental inflammation from the employment of surgical means; cauterisation of the sac, ligature, or incision and suture of the walls. The new facts which M. Picheney recounts seem to show that such intervention is not necessary, since, indeed, it is sufficient to drive back the intestine from the hernial opening by the astringent action of cold water, so that the cicatrix may form between the lips of the opening and obliterate it by solid matter, such as happens when a truss is applied without irritation. Although the facts presented by M. Picheney may be variously interpreted

they are of great interest—first, from a theoretical point of view, as throwing light upon the mode of action of topical agents, or of the local actions by means of which he has succeeded in obtaining closure of the opening in the ventral walls; next, from a practical point of view, by showing the efficacy of a means so simple and so easily applied as continued irrigation in producing reduction and cure of ventral herniæ, generally considered irreducible and incurable."

M. MEGNIN's valuable researches on helminthology have recently resulted in a memoir on Demodex folliculorum, commenced in the *Recueil* for 15th July, and at the end of the same number may be seen two beautiful plates from the *Bulletin de la Société Centrale Vétérinaire* of *Strongylus minutissimus*, which gives rise to pneumonia in African sheep. M. ARLOING, well known to English readers in connection with the translated edition of *Chauveau's Anatomy*, has completed a series of valuable papers, published in the *Recueil*, on "Differential Osteological Characters of the Ass and the Horse, and of their Hybrids." These were much needed, and seem in every way worthy of the reputation of the Professor of Anatomy at the Lyons Veterinary School. M. SAINT-CYR announces for October next a "Treatise on the Exploration of the Chest of Domesticated Animals." We shall welcome a work by this well-known author on a subject which in English we find best in Percivall's works, where, however, it is necessarily somewhat behind the times. Some of our English veterinarians may wish for information on the *carob bean*, which is one of the products of our newly acquired possession, Cyprus. We learn (*Recueil*, p. 686):—"That although we have not yet scientifically determined the coefficient of digestibility of the carob, we believe we may with safety state *à priori* that this is very great. The nutritive qualities are not in the slightest degree doubted in Algeria by all who have experimented with this material upon animals. Many agriculturists agree even in the opinion that the carob is an alimentary material as rich as it is cheap. As far, then, as we can judge for the future, when more extensive cultivation has reduced its price, it will be incontestably a most precious food."

The following mean composition is given:—Water, 13·5 per cent.; dry matter, organic and inorganic, 86·5 per cent. Of this dry matter there are—Proteids, 6·8 per cent.; fatty matters, 1·03 per cent.; non-azotised extractives, 70·9 per cent.; woody fibre, 5·5 per cent. This is extracted from M. SANSON's *Traité de Zootechnie*. M. Sanson is Professor of Zoology and Zootechny at the National School at Grignon.

He recently exhibited before the Société Centralé an original chart, showing the former geographical ranges of the horse, ass, sheep, goat, ox, and pig; he calls it the "Carte Zootechnique de l'ancien Continent." The science of zootechny is in France thoroughly recognised, and its study is carried on with energy and success and benefit to members of the veterinary profession. When will it be duly appreciated in England? The scientific spirit seems very active among our continental brethren; they neglect no material afforded to them; thus we see announced a work by M. Percheron on the 'Natural History, Hygiène, and Diseases of the Parrot.' We fear many of our practitioners consider the diseases of birds infinitely more valuable than parrots as beneath their observation, though many useful lessons should be gained therefrom, and who is in such a position to appreciate them as a veterinary surgeon?

A new form of écraseur has been devised by M. Vasselin, a student at the Alfort School; he brought it under the notice of the Société Centralé de Médécine Vétérinaire, who appointed a committee to examine it. They state that "the instrument devised by M. Vasselin possesses practical qualities which render it preferable to the one which we at present use, than which it is more simple and easy to hold, cuts less, and is more solid. It is decidedly an improvement. We have tried it, and have proved that it may be employed with much advantage."

The Brussels organ, *Annales de Médécine Vétérinaire*, furnishes us with interesting extracts from the 'Wochensch. f. Thierheilkunde':—"The bovine pest, which towards the end of last year was reported in the province of Gallipoli, and in February of the present year in that of the Dardanelles, has little by little been propagated from Salonica as far as Constantinople. According to the reports published by the 'Bureau d'Hygiène' of the German Empire, the disease has caused considerable losses. In the Government of Gallipoli, for instance, but 10 per cent. of the bovine population remains. The burial of the carcases of the animals which have succumbed to the bovine typhus not having always been attended to, there have been exported from the provinces in question a great number of infected skins, which may become, if the requisite precautions are neglected, the means of introduction of the disease into places into which the fresh or imperfectly dried hides are imported." Let us hope every precaution was taken in examination of the meat supplied as fresh food for our fleet in Turkish waters, and let us hope that sanitary reforms will

not, among others, be forgotten by the Turkish Administration. In connection with the rinderpest we see a useful article forwarded by M. Zundel to the *Recueil* on "The Measures taken in Russia during the last eight years to arrest the Progress of Cattle Plague." They are—

"1. The Minister of the Interior has a "Superior Veterinary Committee," whose functions, among others, are to direct the veterinary service in all Russia, and to point out the best means of opposing epizootics.

2. Thanks to that committee, the veterinary schools have acquired a high degree of importance, have been ranked among the universities, and the veterinarians themselves have acquired consideration and influence. In different parts of the empire have been formed stations of research upon the cause of these epizootics at their origin.

3. In order to more accurately study the etiology of cattle plague, to learn its origin and its mode of action, progress, and propagation, a special commission has been sent into the "Steppes of Kirghises," on the other side of the Ural Mountains. That commission, formed of naturalists, and especially of veterinary surgeons, worked in the Steppes in 1872, 1873, and even in 1874. Its members pursued the pest, so to speak, step by step, observing its progress and its propagation. Frequently they accompanied large herds from the commencement of their journey to their destination, noting day by day the hygienic conditions to which the animals were exposed, marking the first appearance of the disease and its symptoms. These observations, pursued with much zeal and labour, have shown, among other things, (α) that the bovine pest does not develope spontaneously in the Steppes of Kirghises, but that it is always brought thither by contagion. If the disease does not in the Steppes, properly so called, assume formidable dimensions, it is because the pastures there are isolated, and especially separated from the winter abodes of these nomad tribes, and, on the other hand, because the custom which the Kirgishes have of immediately slaughtering all sick animals and using them as food. (β) The disease does not occur spontaneously in herds on the march, but results always from contagion when the herds pass through a place which has been ravaged by the pest. The members consider the true sources of contagion are as yet unknown, probably never will be known. If the herds in their journey could be kept from contact with the stock of the country traversed, if they remained isolated, being conveyed by rail or river, these herds would cease to become a source of danger and propagators of cattle plague.

4. In order to the better surveillance of these herds, and in order to the prompt adoption of measures in case of an outbreak, there are, besides the 111 government veterinary surgeons, 32 of districts, 40 of large towns, 30 of quarantine, and 40 municipal, 67 veterinary surgeons who survey the routes and occupy posts of observation; some are placed at railway stations, some of them have a fixed annual salary of 1000 silver roubles (about £167). The government veterinary appointments have been equally improved, the juniors having 150 roubles, seniors 300 roubles. Apart from these veterinary officials, in 1876 the number of veterinarians in the Government of the Vistula was augmented; there are now 27 there. Government officers receive from 600 to 900 roubles, and district officers from 420 to 600 roubles.

5. Since, in the Government of Grodno, which borders on that of the Vistula, an outbreak of pest has occurred every year, the number of government veterinary surgeons there has been increased, and especially two have been placed in the towns of Kobrin and Brest, with five assistant veterinarians and twenty-five keepers, whose special duty is to discover immediately any outbreak, and to see that the prescribed measures are carried out.

6. Since the opening of the railway from Terespol to Varsovie, and its cohtinuation, *via* Brest to Kiev and Moscow, dealers have been allowed to convey their animals by this rapid means from Brest to Varsovie without subjection to quarantine at the Polish frontier, which is intended only for herds coming by road, but all the animals before the departure should have been carefully examined by the authorised veterinary surgeon.

7. In the department of Vistula, since 1871, new rules have been introduced to oppose the disease when it occurs among native animals; general slaughter of diseased and doubtful animals, with indemnity of the value of each beast.

8. By a law of the 30th May, 1876, from 1st January, 1877, in all Russia in Europe, all cattle of travelling herds affected, whether journeying by rail or road, must be slaughtered. The owners of the animals to be indemnified for all destroyed from a special fund levied as a compulsory insurance, at so much per cent. on all travelling herds.

9. The rendering obligatory conveyance of all herds *by rail* has already been sanctioned, but, unfortunately, still the necessary organisation and material such as the arrangements for good disinfection of trucks, is wanting. Already this system is at work on the Nicolaï-Rybrüsk, Bologore, and Novgorad line, rather as an experiment.

10. In accordance with the resolutions adopted at the international conference at Vienna, in 1872, and with the convention between the Russian and Austro-Hungarian governments, in 1874, with the German Empire in 1875, and with Great Britain in 1876, the local authorities of the different departments adjoining the Austro-Hungarian and German frontiers, as well as the Black Sea or the Baltic as much as possible warn the neighbouring foreign authorities of such outbreak by telegraph. Each week the authorities publish in the official journal of each department information of the progress of the epizootic, and they furnish the same information to the medical office of the Minister of the Interior. That officer publishes the collected reports in the *Monitor of the Empire,* and communicates them besides to the Minister of Foreign Affairs, whose duty it is to make them known to such ambassadors of specified countries as may be in St. Petersburg. Thus the German Ambassador at St. Petersburg receives monthly reports of the progress of bovine pest and charbon in all the Russian Empire.

11. At the present time the State Council has under consideration a measure for the slaughter of all animals affected in all departments in Russia in Europe (such animals as do not belong to travelling herds)."

The paper on "Theory of Germs in its Application to Medicine and Surgery," by MM. Pasteur, Joubert, and Chamberland, commenced in the July number of the *Journal de Médecine Vétérinaire et de Zootechnie*, is well worth perusal, and the same number contains a long leading article on Tyndall's paper, "Spontaneous Generation," read before the Royal Society.

The latest recommendation for cure of glanders, alcohol in large doses, has been tried and found unsatisfactory. M. Baron, of whom all the journals speak well, has had the exceptional honour of direct nomination to the chair of zootechny at the Alfort school. MM. Mauri and Labat have been appointed to the chairs of medical and surgical pathology at the Toulouse school.

Death has removed from the ranks of pathological anatomists the well-known Rokitansky, of Vienna. His loss will be regretted by veterinarians. His services to science may be summarised in the words of *Nature:* "He rapidly won for pathological anatomy an importance which had been hitherto wanting in German schools of medicine, and caused its recognition as the foundation of all research, not only in pathological physiology, but in the whole province of medi-

cine. The old symptomatic system of classification was replaced by a careful discriminating study of the changes brought about in individual organs by the varied forms of disease. The delicate appliances of modern science enabled him to detect a large number of new diseases which had hitherto been classed with other diseases on account of the apparent similarity in symptoms. To the classical researches of Von Rokitansky, probably more than to any other source, modern diagnosis owes its perfection."

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 501.)

CAPRIFOLIACEÆ—CAPRIFOILS.

The natural order now to be considered is diagnosed as follows:—

Cinchonal Exogens, with epipetalous stamens, straight anthers bursting longitudinally, consolidated fruit, and leaves without stipules.

The true plan of the order will be made out from the accompanying description by Professor Lindley.

Shrubs or herbaceous plants, with opposite leaves, destitute of stipules. Flowers usually corymbose, and often sweet-scented. Calyx superior, 4—5 cleft, usually with 2 or more bracts at the base. Corolla superior, monopetalous or polypetalous, rotate or tubular, regular or irregular. Stamens epipetalous, equal in number to the lobes of the corolla, and alternate with them. Ovary with from 1 to 5 cells, one of which is often 1-seeded, the others being many-seeded. In the former the ovule is pendulous; style 1; stigmas 3 or 5. Fruit indehiscent, one or more celled, either dry, fleshy, or succulent, crowned by the persistent lobes of the calyx. Seeds either solitary and pendulous, or numerous and attached to the axis; testa often bony; embryo very small, in fleshy albumen; radicle next the hilum. As left by Jussieu this order was a heterogeneous assemblage; as altered and better limited it seems to be less objectionable. It possesses a striking affinity with cinchonads in the monopetalous tubular corolla; definite stamens, inferior ovary, and opposite leaves, an affinity which is confirmed by the corolla

of the flowers to become radiant, but from which it differs in being polypetalous and polyspermous, and only half epigynous. Besides these points of resemblance, caprifoils probably tend towards umbellifers through Sambuceæ. Natives of the northern parts of Europe, Asia, and America, passing downwards within the limits of the tropics; found very sparingly in Northern Africa, and little known in the southern hemisphere.*

The order is represented by the following interesting genera and species of native plants, namely—

1. *Sambucus nigra.* Black elder.
2. *Sambucus ebulus.* Daneswort.
3. *Viburnum lantana.* Common guelder rose.
4. *Viburnum opulus.* Wayfaring tree.
5. *Lonicera periclymenum.* Common woodbine.
6. *Lonicera caprifolium.* Perfoliate woodbine.
7. *Linnæa borealis.* Linnæa.

1. The *Common Elder* is too well known to need description. It is a common hedge plant, doubtless brought into the hedgerow by birds; here it is often a disagreeable weed, as its large leaves and quick growth soon causes the destruction of quicks or other repellant plants. It is, however, not unfrequently made use of as a quickly growing fence around country gardens, its various uses in former times probably recommending it to be placed near the homestead. Even at the present time an ointment is made from its green leaves, which is still much used by the poor people. Its leaves soaked in oil is also used under the name of oil of elder, which is one of the "seven oils" still relied upon by the common farrier and cowmen and grooms as "a sovereign remedy in all kinds of hurts and wounds." Its flowers are still distilled as a famous water for the eyes, whilst who shall say how much fine old port is due to the elder berry? Mrs. Lankester says that "in Kent there are fields or orchards entirely of elder trees, which are cultivated for the sake of their fruit, which is brought regularly to market and sold for the purpose of making wine: the price is from four shillings to six shillings a bushel. These berries are said not only to be used for legitimately making British wines, but to a great extent in the adulteration of foreign wines, especially port; and we have heard of the confessions of an innkeeper in a university town who revealed, on his retirement from business, that elder wine, judiciously flavoured with vinegar, sugar, and small quantities of port,

* 'Vegetable Kingdom,' p. 766—7.

constituted his famous clarets and Bordeaux, so much admired and so highly paid for by the undergraduates."*

2. The *Daneswort*, we think, is an introduced plant, as it is usually found about the homestead, and not unfrequently on truly archaic sites. The plant is scarcely woody, and has a creeping rootstock. The flowers, which are pinkish, are followed by a berry black as that of the common elder, but smaller; the fruits, however, are shy of perfecting themselves. The Danewort *S. Ebulus* has purple flowers, but the berries are so much like those of the common elder as to be occasionally used for the same purposes. In accounting for its English name Sir J. E. Smith says: "Our ancestors evinced a just hatred of their brutal enemies the Danes in supposing the nauseous, fetid, and noxious plant before us to have sprung from their blood." But we cannot help thinking that both kinds of elder were not only used medicinally, but were also held in great superstitious reverence. Mr. Jones, in his notes on certain superstitions in the Vale of Gloucester, cites the following, which, by the way, is no unusual case: Some men were employed in removing an old hedgerow partially formed of elder trees. They had bound up all the other wood into faggots for burning, but had set apart the elder, and inquired of their master how it was to be disposed of. Upon his saying that he should, of course, burn it with the rest, and ordering it to be faggoted, one of the men said, with an air of undisguised alarm, 'that he never heard of such a thing as burning Ellan Wood; and, in fact, so strongly did he feel upon the subject that he refused to participate in the act of tying it up.' The wood Ellan (still common with us) indicates the origin of the superstition. In low Saxon the *Sambucus nigra* is called ellhorn. Arnkiel unsuspectingly relates, 'Our forefathers also held the ellhorn holy, wherefore whoever need to hew it down (or cut its branches) has first to make request, 'Lady Ellhorn, give me some of thy wood, and I will give thee some of mine when it grows in the forest'—the which with partly bended knees, bare head, and folded arms was ordinarily done, as I myself have often seen and heard in my younger years.' There exist many superstitions respecting elder-wands, elder trees before stables, the shedding of water under them, and the elder mother, a Danish superstition. The attributed curative effects of elder are well known. Its flowers are an eye-wash and cosmetic, and its bark and leaves are used for various purposes, but the most curious use is that which has been recorded by Mr. Jones on the authority of Lord Ducie:

* 'English Botany,' new edition, p. 200.

'A small piece cut from a young shoot just above and below a joint, so as to leave the bud projecting at each end of it after the fashion of a rude cross, borne constantly about the person, is a most certain and effectual cure for rheumatism. It appears, however, that the elder to be thus efficient must grow in consecrated ground. In Tortworth churchyard (and others in the county of Gloucester) is such a tree, and we are told that application is frequently made for bits of it from a considerable distance, and that some of its recipients are not only willing, but able to give it a good character of many years' standing.'

3. The *Common Guelder Rose* is found scattered here and there in limestone districts. It is known by its compact heads of white flowers, the outer of which have an enlarged irregular corolla like some of the Umbellifera. In cultivation the masses of flowers look like a large white ball, and are known as 'witsun bosses.' In autumn the leaves often assume a rich red colour. The berries are eaten by birds. The guelder rose is represented as common, but we find that, while the wayfaring tree occupies almost every hedgerow and thicket in the oolitic districts, the *V. lantana* is comparatively rare.

4. The *Wayfaring Tree* is well known from its massive heads of small white flowers and mealy ovate leaves. The flowers are surrounded by at first pink and afterwards blackish berries, which are eaten by birds and are said to be used by the Swiss for ink. We quote Howitt's lines on the wayfaring tree on account of their beauty:—

"Wayfaring tree! what ancient claim
Hast thou to that right pleasant name?
Was it that some faint pilgrim came
Unhopedly to thee?

"In the brown desert's weary way,
Mid toil and thirst's consuming sway;
And there, as 'neath thy shade he lay,
Blest the wayfaring tree?

"Or is it that thou lov'st to show
Thy coronets of fragrant snow,
Like life's spontaneous joys that flow
In paths by thousands beat?

"Whate'er it be, I love it well;
A name, methinks, that surely fell
From poet in some evening dell
Wandering with fancies sweet."

5 and 6. The *Honeysuckles, Woodbines,* or *Eglantines* are well known as both wild and garden favourites. The

pinkish-flowered wild sort is very common to our woods and hedgerows, but the yellowish-flowered sort with its rare perfume is very uncommon in the wild state, though we have gathered it in the middle of Stanway wood, in Gloucestershire. It is well distinguished by its larger yellowish flowers and connate or perfoliate leaves. The red berries of both plants are innocuous and eaten by birds. The perfoliate honeysuckle sometimes produces yellow berries. The honeysuckle has always been a favourite flower; its perfume, as well as the lovely appearance of the whole plant, ensuring its favorable reception both to the lover of flowers and the poet.

7. The *Linnæa,* whose name was changed from Nummularia to Linnæa, at the request of the great Swedish botanist, who said that its lonely depressed growth was a fitting emblem of his own early fate; and when in later years the Swedish government gave him a crest of this flower to add to his coat of arms Linnæus placed it on his seal with this motto, 'Tantus amor florum,' so great is the love of flowers."* The Linnæa is a pretty plant, rarely met with in the north of England; it does not possess any active quality.

VIVISECTION IN FRANCE.

Letter from Mr. James Cowie, Sunbridge Hall, Bromley, Kent. With an Official Communication from the Minister of Agriculture and Commerce.

The profession will receive with much satisfaction the announcement which we are able to make, that Mr. James Cowie, of Sundridge Hall, Bromley, has just received an official communication from the Minister of Agriculture and Commerce, of France, informing him that vivisection, as hitherto practised in Veterinary Schools in that country, has been put an end to, and that experimental operations for the future are to be confined to four, viz. *bleeding, tracheotomy, setoning,* and *parakentesis,* and that the animals operated on are to be immediately thereafter destroyed.

In the communication which we have received from Mr. Cowie, he rightly observes that a great victory has thus been obtained in the cause of humanity, and for which we have reason to be thankful. He thus writes:

"I have devoted a portion of this and last year at very considerable expense and trouble, as you may believe, to this

* 'English Botany,' vol. iv, p. 210.

work, and not I hope without great results being on the eve of accomplishment. I could not have effected anything material without the aid, moral and practical, of my professional brethren. In my several interviews with the Statesmen abroad, I endeavoured to keep my own individual efforts in the background, except as a delegate of a great Corporation; and several of the Ministers expressed their admiration of our profession, and wished me to convey to my constituents their approval of the feelings which had prompted them on behalf of humanity to their patients, and the lower animals generally.

"Your Testimonial against vivisection being necessary as an element of education, along with that of other Professors, was cordially concurred in by Professor Schiff, late of Florence, and now of Geneva, and his testimonial was published along with yours and theirs in French, of which I distributed 1000 copies. As he is well known on the Continent as one of the greatest physiologists in Europe, his testimony was valuable.

"I had a long and very interesting interview with M. Bouley, whom you may know has hitherto opposed all reforms in the matter of the *sixty-four* operations, and the twelve hours' work of the performers hitherto permitted at Alfort. As Director-general of all the veterinary schools in France, he promised me his support, and he has been loyal to his promise. I have undertaken to let the veterinary profession know that he is equally great in their estimation in a scientific point of view as in his humane feelings, as demonstrated on the present occasion.

"We—that is, I and my daughter, who is a good linguist—had also a meeting with Dufaure, the Prime Minister, and you would have been amused how well my daughter parried with his scruples and fencing. He said he did not see what he could do in the matter, when she replied, 'You can do a great deal, you can give effect to the favorable opinion you have expressed to us by laying the matter before the Cabinet.' After some hesitation, he said, 'Well, I will do so,' and he kept his promise that very night.

"I send you a translation of the official document I have since received from Baron de Bort, the Minister of Agriculture and Commerce, to the following effect:—

'Sir,—You wish in the name of English veterinary surgeons, to call my attention to the practical exercises of surgery which the pupils practise in veterinary colleges on the living animal. You consider the practice useless, and

you ask that it should be prohibited, in consequence of the pain it causes to the animals. I cannot, sir, but render homage to the sentiment which has led you to take this step, and I am quite disposed to give, as far as possible, satisfaction to the wish you have expressed to me. Our Government has already occupied itself at different times on this question. A warrant was issued in 1867, nominating men competent to judge; but their report was contrary to the opinion which you hold, it being to the effect that it is indispensable to instruct the pupils to operate on the living animal.

'You can understand, sir, that in the face of this warrant I cannot entirely forbid a practice which is judged necessary for the proper instruction of pupils. Nevertheless, taking your request into consideration, I have addressed instructions to the Director of the veterinary schools that the pupils do not practise on living animals, excepting in the following operations:—setons, bleeding, tracheotomy and trepanning or tapping. These operations being executed with great rapidity give only small pain to the object on which they are practised. I have besides asked the Director of the schools to have the animals which are operated on killed immediately after the operation, in the most prompt and least painful manner.

'Receive sir, the assurance of my distinguished consideration.

'(Signed) 'T. DE BORT,

'*Minister of Agriculture and Commerce.*'

"I think we may fairly conclude that vivisection proper is put an end to in France by this order of de Bort's. The four operations retained can be performed without almost any pain, and in fifteen or twenty minutes without casting the animals.

"I believe I shall get a similar order issued in Italy. The prompt slaughtering of the victims would, at all events, prevent the horrible practice of continuing the experimental operations on each horse for a whole week, doing such and such one day, and others the next day, and so on until the poor creatures die of pain and exhaustion. This is done systematically in Italy, and the Director of the school at Turin admitted the fact to me, 'because,' as he said, 'subjects are scarce and dear!'

"Were you prepared to be told of such refinement of cruelty? I feel that it is worth any man's exertions, even to the death, to endeavour to remedy such evils, which are discreditable to the age we live in.

"I don't recollect if I told you that the Italian Minister, in London, wrote me by command of the King to say that His Majesty had received my special address sent to him, and that 'he fully appreciated the object of my mission.'

"At my interview with the Minister he expressed his obligations to the veterinary surgeons of England for bringing the matter before the Goverment. I had two interviews with Cairoli, the Prime Minister, but the matter belonged properly to the department of the Minister of Public Instruction.

"I hope to be able to visit other countries, and if I succeed it will be a 'feather in the cap' of our profession?

"Excuse this rather rambling letter as I have little time to put my thoughts into shape. You can have little idea of the labour I have had in the matter of correspondence, so many want information, &c."

VETERINARY SURGERY AS PERFORMED BY UNSKILLED MEN.

By J. Adams, Warminster.

I QUITE endorse the sentiment of Mr. Dyer relative to the cruelty practised by unskilled men in the performance of operations, as I have for many years witnessed with profound grief their cruelty, where a little care and knowledge would have prevented that which has taken place. Cases of useless firing have been patent to every one, and am heartily glad to see that the operation is passing away from amongst our best men. When I remember Professor Spooner making use of this expression "firing sometimes does good, but *how* we know little or nothing," I think it is high time that a pause should come in the infliction of the cruelty. Take the cruelty of burning the mouth for "lampas" and we have another blacksmith's exhibition; also his sheet anchor of applying stimulating oils to inflamed surfaces and you have another instance of the infliction of unnecessary pain. In one county I am acquainted with a castrator who always insists on sewing up the scrotum after castration, though with what object I cannot possibly divine.

Another person who does a large business in this county has for upwards of fifty years opened the scrotum with the actual cautery, thus causing an amount of pain quite unnecessary, and his only alleged reason for doing it

is that he has always had "good luck." These and many more cruelties I have seen almost daily, and the same experience will occur to every properly regulated mind. I quite agree with our friend Dyer that it is high time that something was done to stop unnecessary cruelty, as neither science, humanity, nor profit are gainers thereby.

Pathological Contributions.

CATTLE PLAGUE.

THE latest report from St. Petersburgh announces that cattle plague exists in the following Governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas: Bessarabia, Volhynia, Podolia.

The disease still exists in Galatz, in European Turkey, where thirteen animals are reported to have either died or been destroyed since the 13th of July. The malady also prevails in the district of Jassy.

FOOT-AND-MOUTH DISEASE.

FOOT-AND-MOUTH disease was reported to have existed in the following counties, during the past month, viz.:

Berks, Bucks, Chester, Derby, Hants, Herts, Kent, Lancaster, Norfolk, Oxford, Stafford, Surrey, Sussex, Warwick, Wilts, York. (West Riding).

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of July, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise:—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Bremen . . .	London . .	Sheep-scab . .	...	21	...	...	21	Slaughtered under the instructions of the Privy Counell.	...	3222	...	...	3222	Slaughtered under the instructions of the Privy Council.
Hamburg . .	„ . .	Foot-and-Mouth	...	2	...	...	2	Ditto	...	575	...	...	575	Ditto
Rotterdam . .	„ . .	„	...	11	...	...	11	Ditto	282	2603	...	...	3158	Ditto
Total Diseased Animals .		Foot-and-mouth	...	13	...	...	13	Total Healthy Animals .	282	6400	...	263	6945	
		Sheep-scab . .	...	21	...	...	21							
		Total . .	...	34	...	...	34							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of July, 1878.

Veterinary Department, Privy Council Office,
August 8th, 1878.

PLEURO-PNEUMONIA.

In the Netherlands, from the 16th of June to the 13th of July, the following cases of pleuro-pneumonia have been registered :—

In Guelderland . . .	4 cases in	1 commune.
„ South Holland . .	31 „	14 communes.
„ Friesland	2 „	2 „

In our own country the disease existed in the following counties during the month of July :—

Beds, Bucks, Chester, Cumberland, Derby, Durham, Essex, Herts, Kent, Lancaster, Leicester, Lincoln (Lindsey), Norfolk, Northampton, Northumberland, Notts, Rutland, Salop, Stafford, Suffolk, Surrey, Sussex, Warwick, Worcester, York. (East Riding, North Riding, and West Riding), The Metropolis, Denbigh, Aberdeen, Ayre, Edinburgh, Fife, Forfar, Kincardine, Lanark, Linlithgow, Perth, Renfrew, Roxburgh, Stirling, Wigtown.

Facts and Observations.

The Reaction of Nitrogen and Water.—Berthelot, having had occasion to repeat the experiments on the formation of ammonium nitrite by means of the electrical discharge, now finds that absolutely pure nitrogen, when exposed in the concentric tubes, in contact with water, to the discharge of a very powerful Ruhmkorff apparatus for from eight to ten hours, yields ammonium nitrite beyond all question. The salt does not appear to be formed unless the discharge is a powerful one. With currents of low tension nitric acid is not formed in moist air. The formation of nitrates and nitrites in atmospheric air is assumed therefore to be due to the action of lightning (*Ann. Chim. Phys.* [5] xii, 445). It must not, however, be forgotten that Zöller and Grete have reopened the enquiry whether ammonium nitrite is a product of the combustion of hydrogen in air, and the result of their experiments, conducted under most rigorous conditions, goes to show that during the combustion of absolutely pure hydrogen in perfectly pure air, small but distinct quantities of the nitrite are formed (*Ber. Chem. Gesell.*, x., 2144).

THE VETERINARIAN, SEPTEMBER 2, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE CONTAGIOUS DISEASES (ANIMALS) ACT OF 1878.

AFTER undergoing important modifications in Committee, the Bill, to which we referred in our last number, passed both Houses of Parliament, and received the Royal assent.

That part of the Act which relates to the importation of Foreign animals will not come into operation till January 1st, 1879; but the part referring to the home trade, the regulation of transit, and the prevention of diseases among animals in this country, will be in force on October 1st next. All the members of the profession are more or less concerned in the legislation which deals with the prevention of animal plague, and those who will be required to act as veterinary inspectors should certainly be familiar with all provisions of the Act and Orders.

A short time ago we congratulated ourselves on the existence of a clause in the Bill, under which every local authority was bound to appoint at least one *veterinary inspector*, and that officer, by virtue of the definition of the term *veterinary* as used with *inspector*, was required to be a member of the Royal College of Veterinary Surgeons in Committee, clause 42 was amended in such a way that the local authority would be bound to appoint so many *veterinary inspectors* as the Privy Council might think necessary, having regard to the circumstances of the district; but the advantage which this addition might be expected to confer on the members of the College was marred by a so-called amendment of the clause under which the term *veterinary* was defined.

In the Bill as introduced into the House of Lords the word *veterinary* used with *inspector* was defined to mean a member of the Royal College of Veterinary Surgeons. Early in the progress of the measure an attempt was made to add the words, *or a holder of the Highland and Agricultural Society's*

Certificate, and the point was conceded so far as to allow the term of veterinary inspector to be applied to a holder of that certificate in Scotland; but the definition of veterinary still remained intact. In the House of Commons the amendment of the defining clause was proposed by the addition of the words which we have just quoted, and it was evident during the discussion which followed that there was a strong feeling against the clause which was urged by Mr. Newdegate and a few other members on behalf of the privilege which was sought to be obtained for the members of the College. The promoters of the Bill declined to give way, and on division the amendment was negatived, but by so small a majority that its supporters were encouraged to persevere in their efforts, which were ultimately so far successful that the clause now stands as follows :—

"Veterinary inspector means an inspector being a member of the Royal College of Veterinary Surgeons, or any veterinary practitioner qualified as approved by the Privy Council."

In what way the modification of the clause will work we cannot divine. How the question of *qualification* other than that of membership of the Royal College will be brought forward, or what extent of disqualification will render any veterinary practitioner unfit for the office of a veterinary inspector, are points which may or may not be determined in the future; for the present we can only express our regret that the original construction of the clause was not sustained. A veterinary inspector under the Act has large powers, and it was not too much to expect that there should be such a guarantee of his fitness for the responsible duties which he will be required to perform, as would be afforded by the possession of the diploma of the College. Now, we presume that the Privy Council will be compelled, in certain cases, to decide whether or not any other document or qualification will amount to satisfactory evidence of fitness for an office in which professional skill and experience are absolutely essential.

Another important change was made while the Bill was in Committee, to which we deem it necessary to make special

reference. A clause was originally framed to enable the Privy Council to extend the definition of "animal," so as to include any animals not named in the Bill and another for extending the definition of disease so as to include any disease of animals. For some reason the House of Commons objected to give powers to include animals other than those named, and the clause was struck out. The power to extend the definition of disease remains, but it is limited to diseases of ruminating animals, horses, and swine. No power, therefore, exists under the Act to deal with "rabies" in dogs.

In the foreign animals' division of the Act an important change has been made in reference to the slaughter of imported stock. The Bill which the Lord President introduced into the House of Lords provided for the slaughter of all imported stock at the place of landing. As the matter now stands the Privy Council has power to exempt the animals of any country from the provisions of the schedule which require slaughter at the landing place, if they are satisfied that the general sanitary condition of the stock and the regulations in force in the country are such as to promise a reasonable security against the introduction of disease.

Taken as a whole the measure is not exactly what the stockowners of this country demanded and perhaps expected, but it must be allowed that it is a great advance on the existing system of legislation.

PROFESSIONAL TITLES.

We have been requested by Mr. J. B. Coleman, M.R.C.V.S., New York, to supply him, through the pages of the *Veterinarian*, with replies to the following questions. The request has been made in consequence of several persons in America having assumed professional titles to which they have no legal right. Exposure no doubt is an effectual means to check such assumptions, put forth as they are without regard to truth, and with the express intention of misleading the public.

A professional reputation which rests on such a foundation

cannot be long maintained, and we might be content to leave it to its inevitable fate; but when such persons endeavour to ride roughshod over legitimate members of the profession, and unblushingly to support a false position even in the witness-box, more than ordinary means of suppression have to be employed. In the communication referred to, Mr. Coleman alludes to a Mr. Going, who, although he has no legitimate claim to the title of "Member of the Royal College of Veterinary Surgeons," does not hesitate to affix to his name initial letters which would lead the public to the conclusion that he was a graduate of the profession. We would gladly have given insertion to Mr. Coleman's letter accompanying the questions, but believe that the end will be best secured by those who are assailed refraining from all personalities.

QUERIES.

1. Does the possession of a certificate from the Highland and Agricultural Society of Scotland entitle its possessor to append to his name for professional purposes the capital letters M.R.C.V.S.E.?

Certainly not.

2. Is there any college in Edinburgh rightly and properly designated the Royal College of Veterinary Surgeons of Edinburgh?

There is no such institution as the Royal College of Veterinary Surgeons of Edinburgh.

3. Can the college in Clyde Street be properly called the Royal College of Veterinary Surgeons of Edinburgh?

No.

4. Does the possession of a Latin document emanating from the Edinburgh Veterinary College, or a medical society in connection with it, headed, "*Medica Societas Collegia Regii Veterinarii Civitatis Edinesis*," entitle its possessor to call himself a member of the Royal College of Veterinary Surgeons of Edinburgh?

As there is no such institution, it is evident that no such right can exist.

5. Does this Latin document emanate from the *College proper*, or from a medical society in connection with it?

It emanates from a debating society which is composed mainly of students.

6. Can any pupil of the Edinburgh Veterinary College, being neither a *member* of its board of directors nor a *member* of its faculty, properly describe himself as a *member* of that college?

Veterinary colleges are educational and not examining institutions, without any legal power to grant *membership* to their students.

7. Whether, does the Highland and Agricultural Society of Scotland, or the faculty of the Edinburgh Veterinary College, finally examine pupils and grant *diplomas proper?*

The Highland and Agricultural Society, and not the Edinburgh Veterinary College has taken upon itself to examine veterinary students, and give a *certificate* of such examination, if successful. A holder of such *certificate* is not, however, a legalised Veterinary Surgeon, the *certificate* not being a "*diploma proper.*"

8. Will the fact of being a *member* of a medical society in connection with the college entitle a graduate to call himself a *member* of the college itself?

No. See reply to question No. 6.

9. Has there ever existed a Royal College of Veterinary Surgeons of Edinburgh which has become defunct?

No such College has ever existed.

ORDERS OF COUNCIL—THE ANIMALS ORDER OF 1878.*

At the Council Chamber, Whitehall, the 16th day of August, 1878. By the Lords of Her Majesty's Most Honourable Privy Council.

Present:—Lord Chancellor, Lord President, Mr. Secretary Cross, and Mr. Chancellor of the Exchequer.

The Lords and others of Her Majesty's Most Honourable Privy Council, by virtue and in exercise of the powers in them vested under The Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:—

* This and the following Orders will not come into operation until October 1st.

Preliminary.

1. This Order may be cited as The Animals Order of 1878.

2. This Order shall take effect from and immediately after the thirtieth day of September, one thousand eight hundred and seventy-eight.

3. This Order extends to Great Britain only.

4. In this Order—

The Act of 1878 means The Contagious Diseases (Animals) Act, 1878:—

Other terms have the same meaning as in the Act of 1878.

Cattle Plague.

5.—(1.) The constable to whom notice of the fact of an animal being affected with cattle plague, or with disease supposed to be cattle plague, is given under Section thirty-one of the Act of 1878, shall forthwith give information thereof to his superior officer, who shall immediately transmit the information by telegraph or other rapid means to the Clerk of the Privy Council, Whitehall, London.

(2.) The constable shall also forthwith give information of the notice to an Inspector of the Local Authority, and to the Local Authority.

6. The following rules shall, pending the arrival of an inspector or other officer of the Privy Council, have effect in relation to cattle plague (namely):

(*a.*) No animal shall be moved alive out of a place infected with cattle plague.

(*b.*) No animal, horse, ass, or mule, and no dog shall be moved alive out of a building or inclosed space in which cattle plague exists or has within ten days existed.

(*c.*) No carcase, and no dung of animals, horses, asses, or mules, and no litter, manure, or fodder shall be moved out a place infected with cattle plague.

7. Where by virtue of the declaration of an Inspector of a Local Authority (under Section ten of the Act of 1878), a cow-shed, field, or other place has become a place infected with cattle plague, the Local Authority shall take all necessary and proper measures, pending the arrival of an Inspector or other officer of the Privy Council, to enforce the observance of the rules with respect to cattle plague, including the placing of constables or other proper officers at the entrances of that cow-shed, field, or other place, and generally the Local Authority and all constables and police officers shall assist the Inspector or other officer of the Privy Council to carry into effect and enforce the rules applicable in the case, and shall do or cause to be done all things from time to time necessary for the effectual execution of the same.

Horses.

8. Horses, asses, and mules shall be deemed to be animals, and glanders and farcy to be diseases, for the purposes of the following sections of the Act of 1878 (namely):

Section thirty-one (notice of disease).
Section thirty-two (Orders of Council).
Section fifty (powers of police).
Section fifty-one (power of entry).
Section fifty-two (detention of vessels).
Section fifty-three (carcases washed ashore).

and of all other sections of the Act containing provisions relative to or consequent on the provisions of those sections, including such sections as provide for offences and procedure.

9. The constable to whom notice of the fact of a horse, ass, or mule being affected with glanders or farcy, or with disease supposed to be glanders or farcy, is given under Section thirty-one of the Act of 1878, shall forthwith give information thereof to an Inspector of the Local Authority, who shall forthwith report the same to the Local Authority.

10. The Local Authority shall publish notice by placards, handbills, or otherwise of the existence of glanders or farcy in any stable, building, or other place, and shall continue such publication during the existence of the disease and until that place has been cleansed and disinfected.

11.—(1.) Where a person having a horse, ass, or mule in his possession or under his charge gives notice to a constable that the horse, ass, or mule is affected with glanders, or any person is convicted of an offence against the Act of 1878 by reason of his having failed to give such a notice, then, if any time thereafter it appears to the Local Authority, on a special report of a Veterinary Inspector, that the horse, ass, or mule is affected with glanders, and the horse, ass, or mule is alive at the end of fourteen days after the receipt by the Local Authority of that special report, the Local Authority may serve on the owner of the horse, ass, or mule a notice in writing requiring him to slaughter it, or to permit them to slaughter it, within a time specified in the notice.

(2.) If in any case the owner fails to comply with the requisition of the notice of the Local Authority, he shall be deemed guilty of an offence against the Act of 1878, unless he shows to the satisfaction of the court of summary jurisdiction before which he is charged that the horse, ass, or mule is not affected with glanders, or that the slaughter thereof is for any reason unnecessary or inexpedient.

(3.) The provisions of this Article may be put in force, from

time to time, as often as occasion requires, in relation to the same horse, ass, or mule, on a further special report as aforesaid.

12. Nothing in this Order applies to horses, asses, or mules, kept in stables of military barracks or camps under the care and supervision of the Army Veterinary Medical Department.

Sheep-Pox.

13.—(1.) Where it appears to an Inspector of a Local Authority that sheep-pox exists, or has within ten days existed, in a shed, field, or other place, he shall forthwith make and sign a declaration thereof.

(2.) He shall serve a notice, signed by him, of the declaration on the occupier of that shed, field, or other place.

(3.) Thereupon that shed, field, or other place, shall become and be a place infected with sheep-pox, subject to the determination and declaration of the Local Authority.

(4.) The Inspector shall, with all practicable speed, inform the Local Authority of his declaration and notice, and shall send his declaration and a copy of his notice to the Local Authority.

(5.) The Local Authority shall forthwith on receipt of that information inquire into the correctness of the Inspector's declaration, with the assistance and advice of a Veterinary Inspector, or of a person qualified according to the Act of 1878 to be such.

(6.) If the Local Authority are satisfied of the correctness of the Inspector's declaration as regards the existence or past existence of disease, they shall by order determine and declare accordingly, and prescribe the limits of the place infected with sheep-pox, and may, if they think fit, include within those limits any lands or buildings adjoining or near to the shed, field, or other place to which the Inspector's declaration relates.

(7.) The Local Authority may include in a place infected with sheep-pox any adjoining part of the district of another Local Authority, with the previous consent in writing of that Authority, but not otherwise.

(8.) If the Local Authority are not satisfied of the correctness of the Inspector's declaration as regards the existence or past existence of disease they shall by order determine and declare accordingly; and thereupon, as from the time specified in that behalf in their order, the shed, field, or other place to which the Inspector's declaration relates shall cease to be a place infected with sheep-pox.

(9.) The Local Authority shall forthwith report to the Privy Council the declaration of the Inspector, and the proceedings of the Local Authority thereon.

14. The following rules shall have effect in relation to a place infected with sheep-pox (namely):

(*a.*) No sheep shall be moved alive out of a place infected with sheep-pox.

(*b.*) No carcase of a sheep shall be moved out of a place infected with sheep-pox, except either with a licence of an Inspector of the Local Authority for the purpose of being buried or destroyed, or with a certificate of an Inspector of the Local Authority certifying that the carcase moved did not belong to a sheep affected with sheep-pox.

15.—(1.) The Local Authority shall cause all sheep affected with sheep-pox to be slaughtered.

(2.) The Local Authority may, if they think fit, cause any sheep being or having been in the same shed, or stable, or flock, or in contact with a sheep affected with sheep-pox to be slaughtered.

(3.) The Local Authority shall, out of the local rate, pay compensation for sheep slaughtered under this Article as follows:

(*a.*) Where the sheep slaughtered was affected with sheep-pox, the compensation shall be one half of its value immediately before it becomes so effected, but so that the compensation do not in any such case exceed forty shillings.

(*b.*) In every other case the compensation shall be the value of the sheep immediately before it was slaughtered, but so that the compensation do not in any case exceed four pounds.

16. Where a Local Authority have declared a place to be infected with sheep-pox, they may, if they think fit, at any time after the expiration of twenty-eight days from the date of the cessation therein of that disease, but not sooner, declare by order that place to be free from sheep-pox.

Sheep-Scab.

17. A person having in his possession or under his charge a sheep affected with sheep-scab, shall treat that sheep, or cause it to be treated, with some dressing or dipping or other remedy for sheep-scab.

Movement or Exposure of Diseased Animals and Horses.

18.—(1.) It shall not be lawful for any person to do any of the following things—

(*a.*) To expose a diseased or suspected animal, horse, ass, or mule in a market or fair, or in a sale-yard, or other public or private place, where animals or horses are commonly exposed for sale.

(*b.*) To place a diseased or suspected animal, horse, ass, or mule in a lair or other place adjacent to or connected with a market or a fair, or where animals or horses are commonly placed before exposure for sale.

(*c.*) To send or carry or cause to be sent or carried a diseased

or suspected animal, horse, ass, or mule on a railway, canal, river, or inland navigation, or in a coasting vessel.

(*d.*) To carry, lead, or drive, or cause to be carried, led, or driven a diseased or suspected animal, horse, ass, or mule on a highway or thoroughfare.

(*e.*) To place or keep a diseased or suspected animal, horse, ass, or mule on common or uninclosed land, or in a field or place insufficiently fenced, or on the side of a highway.

(2.) But this Article shall operate subject to the special provisions of The Diseased Animals (in transit) Order of 1878, and of The Infected Places and Areas (Movement) Order of 1878.

19.—(1.) Where an animal, horse, ass, or mule is exposed or otherwise dealt with in contravention of the last foregoing Article, the Inspector or other officer of the Local Authority appointed in that behalf, shall seise and detain the same, and the same shall be dealt with as follows:

(*a.*) If affected with cattle plague or sheep-pox the animal shall be slaughtered in accordance with the provisions of the Act of 1878 and of this Order;

(*b.*) If affected with pleuro-pneumonia or foot-and-mouth disease the animal shall be dealt with in accordance with the provisions of The Diseased Animals (in transit) Order of 1878;

(*c.*) If affected with sheep-scab the sheep shall be removed to some convenient and isolated place and shall be there kept for such time as the Local Authority think expedient; and

(*d.*) If affected with glanders or farcy the horse, ass, or mule shall be forthwith slaughtered, and, if not slaughtered at the place where seised, it may be moved under the direction and in charge of the Inspector or other officer to the nearest available horse-slaughterer's or knacker's yard, to be there slaughtered, and the Inspector or other officer shall report the fact of the slaughter to the Local authority.

(2.) The Local authority may recover the expenses of the execution by them or by their Inspector or other officer of the foregoing provisions of this Article from the owner of the animal, horse, ass, or mule, or from the consignor or consignee thereof, who may recover the same from the owner.

(3). In the case of a diseased animal, horse, ass, or mule being seised in accordance with the provisions of this Article, it shall not be lawful for the Market Authority or any person to again use or allow to be used for animals, horses, asses, or mules that portion of the market or place where the diseased animal, horse, ass, or mule was found unless and until a Veterinary Inspector of the Local Authority has certified that that portion has been, as far as practicable, cleansed and disinfected.

Movement or Exposure of Dung or other things.

20. It shall not be lawful for any person to send or carry, or caused to be sent or carried, on a railway, canal, river, or inland navigation, or in a coasting vessel, or on a highway, or thoroughfare, any dung, or any fodder or litter which has been in a place infected with pleuro-pneumonia, foot-and-mouth disease, or sheep-pox, or which has been in contact with or used about a diseased animal, horse, ass, or mule, except with a license of the Local Authority, to be given on a certificate of an Inspector certifying that the thing moved has been, as far as practicable, disinfected.

Carcases.

21. (1.) Every Local Authority shall cause the carcase of every animal, horse, ass, or mule that has died of pleuro-pneumonia, foot-and-mouth disease, sheep-pox, sheep-scab, glanders, or farcy, or has been slaughtered in consequence of being affected with sheep-pox, glanders or farcy, to be buried as soon as possible in its skin in some proper place, and to be covered with a sufficient quantity of quicklime or other disinfectant, and with not less than six feet of earth, and, with a view to the carrying out of the provisions of this Article, the Local Authority may, from time to time, make regulations for prohibiting or regulating the removal of any such carcase or for securing the burial of the same;

(2.) Or the Local Authority may, if authorised by licence from the Privy Council, cause the carcase to be destroyed, under the inspection of the Local Authority, in the mode following:

The carcase shall be disinfected, and shall then be removed, in charge of an officer of the Local Authority, to a horse-slaughterer's or knacker's yard approved for the purpose by the Privy Council, or other place so approved, and shall be there destroyed by exposure to a high temperature, or by chemical agents.

(3.) In every such case the Local Authority shall report to the Privy Council the fact and mode of destruction.

(4.) Where, under this Article, a Local Authority cause the carcase of an animal, horse, ass, or mule to be buried, they shall cause its skin to be first so slashed as to make it useless.

22. It shall not be lawful for any person, except with the licence of the Privy Council, to dig up or cause to be dug up, the carcase of an animal, horse, ass, or mule buried under a regulation of a Local authority, or under the direction of the Privy Council or of a Receiver of Wreck.

General Provisions.

23. The constable to whom notice of the fact of an animal being affected with pleuro-pneumonia, foot-and-mouth disease, sheep-pox, or sheep-scab, or with disease supposed to be pleuro-pneumonia, foot-and-mouth disease, sheep-pox, or sheep-scab is given under Section thirty-one of the Act of 1878 shall forthwith give information thereof to an Inspector of the Local Authority, who shall forthwith report the same to the Local Authority.

24. Any person having in his possession or under his charge an animal affected with disease, or with any illness, or suspected of being so affected, besides giving such notice to a constable as he is required by Section thirty-one of the Act of 1878 to give, may, if he thinks fit, give notice of the fact of the animal being so affected, or suspected, to the Inspector of the Local Authority.

25. An Inspector of a Local Authority on receiving in any manner whatsoever information of the supposed existence of disease, or having reasonable ground to suspect the existence of disease, shall proceed with all practicable speed to the place where the disease, according to the information received by him, exists, or is suspected to exist, and shall execute and discharge the powers and duties by or under the Act of 1878, and any Order of Council, conferred and imposed on him as Inspector.

26. The forms given in the first schedule, with such variations as circumstances require, may be used by an inspector for the purposes of the Act of 1878 and of this Order.

27. Where an Inspector of a Local Authority finds in his district pleuro-pneumonia, foot-and-mouth disease, sheep-pox, glanders, or farcy, he shall forthwith make a return thereof to the Local Authority and to the Privy Council, on a form provided by the Privy Council, with all particulars therein required, and shall continue to so make a return thereof on the Saturday of every week until the disease has ceased.

28. Where an Inspector of a Local Authority finds in his district sheep-scab, he shall forthwith make a return thereof to the Local Authority and to the Privy Council, on a form provided by the Privy Council, with all particulars therein required, and shall continue to so make a return thereof on the last day of every month, unless the last day of the month is Sunday, and on the Saturday previous, until the disease has ceased.

29. An Inspector, officer, or constable detaining an animal, horse, ass, or mule under the Act of 1878 or any Order of Council, shall cause it to be supplied with requisite food and water during its detention; and the expenses incurred by him in respect thereof may be recovered from the person

having charge of the animal, horse, ass, or mule, or from its owner.

30. Every Local Authority shall publish notice by placards, handbills, or otherwise, in the immediate neighbourhood of every place or area declared infected, of the fact of such declaration, and shall continue such publication until the place or area has been declared free from disease.

31. A Local Authority declaring by order a place to be free from disease shall forthwith report to the Privy Council the fact of such declaration having been made.

32. A Local Authority may require the value of an animal slaughtered by their order to be ascertained by their officers, or by arbitration.

33. Every Local Authority shall keep in the form given in the second Schedule, or a form to the like effect, a record relative to animals slaughtered by their order, stating the particulars indicated in the form given in the said Schedule, with such variations as circumstances require.

34. A Local Authority may, from time to time, revoke or alter any order, prohibition, or regulation made by them under the Act of 1878 or any Order of Council.

35. Every Local Authority shall send to the Privy Council a copy of every order, prohibition, or regulation made by them.

36. If the Privy Council are satisfied on inquiry, with respect to any prohibition or regulation made by a Local Authority under the Act of 1878 or under any Order of Council, that the same is of too restrictive a character, or otherwise objectionable, and direct the revocation thereof, the same shall thereupon cease to operate.

37. Whenever an Inspector is appointed under Section forty-two of the Act of 1878, or there is any change in the name or address or district of such an Inspector, the Local Authority shall forthwith report the same to the Privy Council.

38. Except where otherwise provided for in any Order of Council, a Local Authority shall provide and supply, without charge, printed copies of documents or forms requisite under the Act of 1878 or any Order of Council.

C. L. PEEL.

THE FIRST SCHEDULE.

Forms for Use by Inspector.

(1.)

Declaration of Disease.

The Contagious Diseases (Animals) Act, 1878.

I, *A.B.* of , the Inspector appointed by , being the Local Authority for the [county] of , hereby declare that I have this day found cattle-plague [*or* pleuro-pneumonia, *or* foot-and-mouth disease, *or* sheep-pox] to exist in the following cow-shed, field, or other place, (that is to say,) [*here describe the place where the disease is found*].

Dated this day 18 .

(Signed) *A.B.*

(2.)

Notice of Declaration (*No.* 1) *to Occupier in Cattle Plague.*

The Contagious Diseases (Animals) Act, 1878.

To *C.D.*

I, *A.B.* of, , the Inspector appointed by , being the Local Authority for the [county] of , hereby give you notice, as the occupier of the following cow-shed, field, or other place, (that is to say,) [*here describe the place where the disease is found,*] that I have made a declaration, a copy whereof is indorsed on this notice [*copy of declaration* (*No.* 1) *as filled up and signed to be indorsed*], and that in consequence thereof the cow-shed, field, or other place aforesaid, with all lands and buildings contiguous thereto in your occupation, have become and are a place infected with cattle plague, and that the same will continue to be a place so infected until the determination and declaration relative thereto of the Privy Council, as provided for in Section ten of the above-mentioned Act.

Dated this day of 18 .

(Signed) *A.B.*

(3.)

Notice of Declaration (*No.* 1) *to Occupier in Pleuro-Pneumonia.*

The Contagious Diseases (Animals) Act, 1878.

To *C.D.* of

I, *A.B.* of , the Inspector appointed by , being the Local Authority for the [county] of , hereby give you notice, as the occupier of the following cow-shed, field, or other place, (that is to say,) [*here describe the place where the disease is found,*] that I have

made a declaration, a copy whereof is indorsed on this notice [*copy of declaration* (*No.* 1) *as filled up and signed to be indorsed*], and that in consequence thereof the cow-shed, field, or other place aforesaid has become and is a place infected with pleuro-pneumonia, and that the same will continue to be a place so infected until the determination and declaration of the Local Authority, as provided for in Section sixteen of the above-mentioned Act.

Dated this day of 18 .

(Signed) *A. B.*

(4.)

Notice of Declaration (*No.* 1) *to Occupier in Foot-and-Mouth Disease.*

The Contagious Diseases (Animals) Act, 1878.

To *C. D.* of

I, *A. B.* of , the Inspector appointed by , being the Local Authority for the [county] of , hereby give you notice, as the occupier of the following cow-shed, field, or other place, (that is to say,) [*here describe the place where the disease is found,*] that I have made a declaration, a copy whereof is endorsed on this notice [*copy of declaration* (*No.* 1) *as filled up and signed to be endorsed*], and that in consequence the cow-shed, field, or other place aforesaid, has become and is a place infected with foot-and-mouth disease, and that the same will continue to be a place so infected until the determination and declaration of the Local Authority, as provided for in Section twenty-two of the above-mentioned Act.

Dated this day 18 .

(Signed) *A. B.*

(5.)

Notice of Declaration (*No.* 1) *to Adjoining Occupiers in Cattle Plague.*

The Contagious Diseases (Animals) Act, 1878.

To *E. F.* of

I, *A. B.* of , the Inspector appointed by , being the Local Authority for the [county] of , hereby give you notice that I have made a declaration, a copy whereof is endorsed on this notice [*copy of declaration* (*No.* 1) *as filled up and signed to be endorsed*], and that in consequence thereof the cow-shed, field, or other place therein described, with all lands and buildings contiguous thereto in the same occupa-

tion, have become and are a place infected with cattle plague, and the same will continue to be a place so infected until the determination and declaration relative thereto of the Privy Council, as provided for in Section ten of the above-mentioned Act. And I hereby require you, as an occupier of lands and building part [*or* the whole] whereof lies within one mile from that cow-shed, field, or other place to take notice that in consequence of the declaration aforesaid the rules of the said Act with respect to places infected with cattle plague will, until such determaintion and declaration of the Privy Council as aforesaid, apply and have effect to and in respect of the lands and buildings of which you are occupier as if the same were actually within the limits of the place so infected.

Dated this day of 18 .

(Signed) *A. B.*

(6.)

Notice of Declaration (*No.* I) *to adjoining Occupiers of contiguous lands in Foot-and-Mouth Disease.*

To *E. F.* of

I, *A. B.* of , the Inspector appointed by , being the Local Authority for the [county] of , hereby give you notice that I have made a declaration, a copy whereof is endorsed on this notice [*copy of declaration* (*No.* 1) *as filled up and signed to be indorsed*], and in consequence thereof the cow-shed, field, or other place therein described, has become and is a place infected with foot-and-mouth disease, and the same will continue tc be a place so infected until the determination and declaration relative thereto of the Local Authority, as provided for in Section twenty-two of the above-mentioned Act.

Dated this day of 18 .

(Signed) *A. B.*

THE SECOND SCHEDULE.

Form of Record.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

County [*or* Borough, *or* Burgh] of _____

RECORD.

PART I.

RECORD of each Animal affected with Pleuro-pneumonia [*or* Sheep-pox] Slaughtered (or reserved for Observation and Treatment) in pursuance of the above-mentioned Act.

Date of the Order for Slaughter by the Local Authority.	Date of the Execution of the Order.	Name of Premises on which the Animal was Slaughtered, and of the Parish in which situate.	Name and Address of the Owner of the Animal.	Description of the Animal Slaughtered whether Bull, Cow, Ox, Heifer, or Calf; [*or* Sheep.]	Value of the Animal immediately before it was affected.	Date of Valuation.	Name and Address of the Valuator.	Number of Animals Valued.	Amount of Valuation per Head.	Number Slaughtered.	Number died since Valuation.	Witness to the Slaughtering.	Amount of Compensation to Owner per Head.	Total Amount of Compensation paid by the Local Authority to the Owner.
					£ s. d.				£ s. d.				£ s. d.	£ s. d.

Of the above Animals the following were reserved for Observation and Treatment by direction of the Privy Council, dated _____

REMARKS.

Part II.

Record of each Animal that, having been in the same Shed or Herd [*or* Flock], or in contact with any Animal affected with pleuro-pneumonia [*or* Sheep-pox], has been Slaughtered in pursuance of the above-mentioned Act.

Date of the Order for Slaughter by the Local Authority.	Date of the Execution of the Order.	Name of Premises on which the Animal was Slaughtered, and of the Parish in which situate.	Name and Address of the Owner of the Animal.	Description of the Animal Slaughtered whether Bull, Cow, Ox, Heifer, or Calf; [*or* Sheep].	Value of the Animal Slaughtered.	Date of Valuation.	Name and Address of the Valuator.	Number of Animals Valued.	Amount of Valuation per Head.	Number Slaughtered.	Witness to the Slaughtering.	Amount of Compensation to Owner per Head.	Total Amount of Compensation paid by the Local Authority to the Owner.
					£ *s.* *d.*				£ *s.* *d.*			£ *s.* *d.*	£ *s.* *d.*

REMARKS.

THE DISEASED ANIMALS (IN TRANSIT) ORDER OF 1878.

At the Council Chamber, Whitehall, the 16th day of Angust, 1878, by the Lords of Her Majesty's Most Honourable Privy Council.

Present: Lord Chancellor, Lord President, Mr. Secretary Cross, Mr. Chancellor of the Exchequer.

The Lords and others of Her Majesty's Most Honourable Privy Council, by virtue and in the exercise of the powers in them vested under The Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:

1. This Order may be cited as The Diseased Animals (in transit) Order of 1878.

2. This Order shall take effect from and immediately after the thirtieth day of September, one thousand eight hundred and seventy-eight.

3. This Order extends to Great Britain only.

4. In this Order the Act of 1878 means The Contagious Diseases (Animals) Act, 1878:

Other terms have the same meaning as in the Act of 1878.

5. By virtue of Section twenty-seven of the Act of 1878, where an animal is found to be affected with pleuro-pneumonia or foot-and-mouth disease—

(1.) While exposed for sale or exhibited in a market, fair, sale-yard, place of exhibition, or other place; or,

(2.) While placed in a lair or other place before exposure for sale; or

(3.) While being in or on a landing-place or wharf, or other place during transit, or while in course of being moved by land or by water; or

(4.) While being on common or uninclosed land; or generally

(5.) While being in a place not in the possession or occupation or under the control of the owner of the animal;

Then the following special regulations shall apply in case of—

A.—*Pleuro-pneumonia.*

(*a.*) Where pleuro-pneumonia is found to exist, the Inspector of the Local Authority shall seise and detain all the diseased cattle.

(*b.*) The diseased cattle so seised shall, if not slaughtered at the place where they are seised, be moved to the nearest available slaughter-house with a licence of the Inspector; and that licence shall be in force for twelve hours, and no longer, and shall specify

the slaughter-house to which the cattle are to be moved for slaughter; and they shall be there slaughtered in accordance with the provisions of the Act of 1878:

And the following special regulations shall apply in case of—

B.—*Foot-and-Mouth Disease.*

(*c.*) Where foot-and-mouth disease is found to exist, the Inspector of the Local Authority shall seise and detain all the diseased animals.

(*d.*) The diseased animals so seised may be slaughtered by or at the request of the owner or person in charge thereof, either at the place where they are seised, or at the nearest available slaughter-house; in which latter case they may be moved for the purpose of being there slaughtered, with a licence of the Inspector; and that licence shall be in force for twelve hours, and no longer, and shall specify the slaughter-house to which the animals are to be moved for slaughter; or the diseased animals, if not slaughtered as aforesaid, shall be moved, in charge of the Inspector or other officer of the Local Authority appointed in that behalf, to some convenient and isolated place, and shall be there kept for such time as the Local Authority think expedient, subject, however, to their being slaughtered at any time by or at the request of the owner or person in charge thereof:

And the following regulations shall apply in case of—

C.—*Animals not Diseased.*

(*e.*) All animals in the market or other place referred to in this Article, other than the diseased animals so seised, may be moved in all respects as if no disease had been found in that market or other place.

6. In the case of an animal being found to be affected with pleuro-pneumonia or foot-and-mouth disease in a market or other place referred to in the last foregoing Article, it shall not be lawful for the Market Authority or any person to again use or allow to be used for animals that portion of the market or other place where the diseased animal was found, unless and until a Veterinary Inspector of the Local Authority has certified that that portion has been, as far as practicable, cleansed and disinfected.

7. Notwithstanding anything in the Act of 1878, or any Order of Council, a market or other place aforesaid, or any part thereof, shall not be declared to be an infected place, or be made part of an infected place, except by the Privy Council; and a slaughter-house, or any part thereof, to which a diseased animal is moved for slaughter under this Order, shall not, by reason thereof, be declared to be an infected place.

8. The Inspector of the Local Authority acting under this

Order shall forthwith report to the Local Authority the action taken by him hereunder, and the Local Authority shall forthwith report the same to the Privy Council.

9. The Local Authority may recover the expenses of the execution by them, or by their Inspector or officer, of this Order from the owner of the animals seised, or from the consignor or consignee thereof, who may recover the same from the owner.

10. Nothing in this Order shall apply to a foreign animals' wharf or to a foreign animals' quarantine station.

C. L. PEEL.

THE INFECTED PLACES AND AREAS (MOVEMENT) ORDER OF 1878.

At the Council Chamber, Whitehall, the 16th day of August, 1878, by the Lords of Her Majesty's Most Honourable Privy Council. Present: Lord Chancellor, Lord President, Mr. Secretary Cross, Mr. Chancellor of the Exchequer.

The Lords and others of Her Majesty's Most Honourable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order, and it is hereby ordered as follows:

1. This Order may be cited as the Infected Places and Areas (Movement) Order of 1878.

2. This Order shall take effect from and immediately after the thirtieth day of September, one thousand eight hundred and seventy-eight.

3. This Order extends to Great Britain only.

4. In this Order—

The Act of 1878 means the Contagious Diseases (Animals) Act, 1878:

Other terms have the same meaning as in the Act of 1878.

Places infected with Pleuro-pneumonia.

5. Cattle not affected with pleuro-pneumonia may be moved into a place infected with pleuro-pneumonia, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that all the cattle in the infected place have died or been slaughtered, and that the cow-sheds or other places where the diseased cattle were kept have been, as far as practicable, cleansed and disinfected.

6. Cattle affected with pleuro-pneumonia may, by Order of Council to be made on the application of a Local Authority, be moved out of places infected with pleuro-pneumonia, for slaughter,

in the manner and on the conditions in that Order specified, where the Privy Council are satisfied, on the representation of a Local Authority, that the slaughter of diseased cattle in infected places in the district of that Local Authority is impracticable or would be highly inconvenient.

7. Cattle not affected with pleuro-pneumonia may be moved out of a place infected with pleuro-pneumonia:

(1.) To a slaughter-house, for the purpose of being slaughtered, with a license of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the cattle moved are not affected with pleuro-pneumonia. That licence shall be available for twelve hours, and no longer, and shall specify the slaughter-house to which the cattle are to be moved for slaughter. The cattle so moved shall be moved under the direction and in charge of an Inspector or other officer of the Local Authority appointed in that behalf, who shall report the fact of the slaughter to the Local Authority; or

(2.) To other premises, for purposes of feeding, or other ordinary purposes connected with the breeding or rearing of cattle, or for the purpose of isolation, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the cattle moved are not affected with pleuro-pneumonia. That licence shall specify the place from which, and the place to which, and the person to whom, they are to be moved, and the time for which the licence is available, and the purposes and conditions for and on which the movement and keeping are allowed; and the cattle moved thereunder shall be kept at the place specified for the time and according to the conditions specified in the licence. The cattle moved in pursuance of the licence shall be moved under the direction and in charge of an Inspector or other officer of the Local Authority appointed in that behalf.

But nothing in this Article shall be deemed to authorise the granting of a licence by a Local Authority for the movement of cattle into the district of another Local Authority, or to a market, fair, sale-yard, or place of exhibition.

Areas infected with Pleuro-pneumonia.

8. Cattle not affected with pleuro-pneumonia may be moved into or in such parts of an area infected with pleuro-pneumonia as are not comprised in a place infected with pleuro-pneumonia, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the cattle to be moved are not affected with pleuro-pneumonia, and have not, to the best of his knowledge and belief, been exposed to the infection of pleuro-pneumonia.

9. Cattle not affected with pleuro-pneumonia may be moved out of such parts of an area infected with pleuro-pneumonia as are not comprised in a place infected with pleuro-pneumonia, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the cattle are not affected with pleuro-pneumonia, and have not, to the best of his knowledge and belief, been exposed to the infection of pleuro-pneumonia. That licence shall specify the place to which, and the person to whom, they are to be moved, and, if the cattle are to be moved into the district of another Local Authority, there shall also be requisite a licence of the Local Authority of the district into which they are to be moved, indorsed on or referring to such first-mentioned licence; and the cattle, after they are received at the place specified in the licence, are not to be moved in the district of that Local Authority except with the further licence of that Local Authority.

Places infected with Foot-and-Mouth Disease.

10. Animals may be moved into a place infected with foot-and-mouth disease with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that all the diseased animals have died or been slaughtered, and that the cow-sheds or other places were the diseased animals were kept have been, as far as practicable, cleansed and disinfected.

11. Animals not affected with foot-and-mouth disease may be moved out of a place infected with foot-and-mouth disease:

(1.) To a slaughter-house, for the purpose of being slaughtered, with a licence of the Local Authority, to be granted on the certificate of a Veterinary Inspector certifying that the animals are not affected with foot-and-mouth disease. That licence shall be available for twelve hours, and no longer, and shall specify the slaughter-house to which the animals are to be moved for slaughter. The animals so moved shall be moved under the direction and in charge of an Inspector or other officer of the Local Authority appointed in that behalf, who shall report the fact of the slaughter to the Local authority: or

(2.) To other premises, for the purpose of feeding, or other ordinary purposes connected with the breeding or rearing of animals, or for the purpose of isolation, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the animals moved are not affected with foot-and-mouth disease. That licence shall specify the place from which, and the place to which, and the person to whom, they are to be moved, and the time for which the licence is available, and the purposes and conditions for and on which the movement and keeping are allowed; and the animals moved

thereunder shall be kept at the place specified for the time and according to the conditions specified in the licence. The animals moved in pursuance of the licence shall be moved under the direction and in charge of an Inspector or other officer of the Local Authority appointed in that behalf.

But nothing in this Article shall be deemed to authorize the granting of a licence by a Local Authority for the movement of animals into the district of another Local Authority, or to a market, fair, sale-yard, or place of exhibition.

Areas infected with Foot-and-Mouth Disease.

12. Animals not affected with foot-and-mouth disease may be moved into or in such parts of an area infected with foot-and-mouth disease as are not comprised in a place infected with foot-and-mouth disease, with the licence of a Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the animals to be moved are not affected with foot-and-mouth disease, and have not, to the best of his knowledge and belief, been exposed to the infection of foot-and-mouth disease.

13. Animals not affected with foot-and-mouth disease may be moved out of such parts of an area infected with foot-and-mouth disease as are not comprised in a place infected with foot-and-mouth disease, with a licence of the Local Authority, to be granted on a certificate of a Veterinary Inspector certifying that the animals are not affected with foot-and-mouth disease, and have not, to the best of his knowledge and belief, been exposed to the infection of foot-and-mouth disease. That licence shall specify the place to which, and the person to whom, they are to be moved, and, if the animals are to be moved into the district of another Local Authority, there shall also be requisite a licence of the Local Authority of the district into which they are to be moved, indorsed on or referring to such first-mentioned licence; and the animals after they are received at the place specified in the licence, are not to be moved in the district of that Local Authority except with the further licence of that Local Authority.

C. L. PEEL.

THE CLEANSING AND DISINFECTION ORDER OF 1878.

At the Council Chamber, Whitehall, the 16th day of August, 1878. By the Lords of Her Majesty's Most Honourable Privy Council.

Present:—Lord Chancellor, Lord President, Mr. Secretary Cross, and Mr. Chancellor of the Exchequer.

The Lords and others of Her Majesty's Most Honourable Privy Council, by virtue and in exercise of the powers in them vested under The Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows :—

1. This Order may be cited as The Cleansing and Disinfection Order of 1878.

2. This Order shall take effect from and immediately after the thirtieth day of September, one thousand eight hundred and seventy-eight.

3. This Order extends to Great Britain only.

4. In this Order—

The Act of 1878 means The Contagious Diseases (Animals) Act, 1878:

Master includes a person having the charge or command of a vessel:

Loading-pen means a stationary pen or other inclosed space being in or about a station, building, or land of a railway company, and used or intended for the reception or keeping of animals before, after, or in course of their transit by railway:

Truck means a vehicle used or intended for carrying animals on a railway:

Van means a vehicle used or intended for carrying animals on land otherwise than on a railway:

Other terms have the same meaning as in the Act of 1878.

5. Every vessel used for carrying animals by sea, or on a canal, navigation, or river, shall after the landing of animals therefrom, and before the taking on board of any fresh animals or other cargo, be cleansed and disinfected in the mode following:—

(1.) By the scraping or sweeping of all parts of the vessel with which animals or their droppings have come in contact:

(2.) Then by the thorough washing or scrubbing or scouring of the same parts of the vessel with water:

(3.) Then by the application to the same parts of the vessel (except those parts ordinarily used for passengers) of a coating of lime-wash containing in each gallon of lime-wash four ounces of chloride of lime: and

(4.) By the application to the same parts of the vessel ordinarily used for passengers of lime-wash or of water containing in each gallon of lime-wash or of water four ounces of chloride of lime.

The scrapings or sweepings of the vessel shall not be landed until well mixed with quicklime.

6. Every loading-pen shall be cleansed and disinfected, either on each day on which it is used and after the using thereof, or at some time not later than twelve o'clock at noon of the next following day, unless the following day is Sunday, and then of the Monday following, and before the using thereof.

7. Every truck and every van shall, on every occasion after an animal is taken out of the same, and before any other animal is placed therein, be cleansed and disinfected.

8. A loading-pen, truck, and van shall be cleansed and disinfected in the mode following:

(1.) By the scraping or sweeping of all parts of the loading-pen, truck, or van with which animals or their droppings have come in contact, and the effectual removal from the loading-pen, truck, or van of all dung, sawdust, litter, and other matter:

(2.) Then by the thorough washing of the same parts with water:

(3.) Then by the application to the same parts of a coating of lime-wash, containing in each gallon of lime-wash four ounces of chloride of lime.

The sweepings of the loading-pen, truck, or van shall forthwith be well mixed with quicklime, and be effectually removed from contact with animals.

9. Every moveable gangway or passage-way, cage, or other apparatus, used or intended for the loading or unloading of animals on or from a truck or vessel, or otherwise used in connection with the transit of animals, shall, as soon as practicable, after being so used be cleansed in the mode following:

(1.) By the scraping or sweeping and the effectual removal therefrom of all dung, litter, and other matter:

(2.) Then by the thorough washing thereof with water.

10. Where an animal at a place of landing or place adjacent thereto is affected with disease, that place and every other place where the animal is or has been shall not be used for any animals other than animals brought thereto with that animal (in the same vessel or otherwise) unless and until the place has been cleansed and disinfected.

11. A Local Authority shall cause the cow-shed, field, or other place in which an animal affected with pleuro-pneumonia, foot-and-mouth disease, or sheep-pox has been kept while so affected, or has died or been slaughtered, to be, as far as practicable, cleansed and disinfected and all litter, dung, or other thing that has been in contact with or used about any such animal to be disinfected, burnt, or destroyed.

12. A Local Authority may, from time to time, make regulations for providing for the cleansing and disinfection of places

used by diseased animals, and may prescribe the mode in which such cleansing and such disinfection are to be effected.

13. Where a Local Authority exercise the power of causing a place to be cleansed and disinfected the occupier thereof shall give all reasonable facilities for that purpose.

14. If anything is done or omitted to be done in contravention of any of the foregoing provisions, the owner and the master of the vessel in which,—and the railway company carrying animals on or owning or working the railway on which,—and the owner of the gangway or passage-way, cage, or other apparatus in respect of which,—and the owner and the occupier of the place of landing or place adjacent thereto or other place in which,—and the occupier of any other place in respect of which,—(as the case may be,) the same is done or omitted, shall each be deemed guilty of an offence against the Act of 1878.

15. A Local Authority may, from time to time, make regulations for the following purposes, or any of them:

For requiring the owners, lessees, or occupiers, of markets, fairs, sale-yards, places of exhibition, lairs, or other places used for animals to cleanse those places, from time to time, at their own expense:

For requiring the owners, lessees, or occupiers, of those places to disinfect the same, or any specified part thereof, from time to time, at their own expense, where in the judgment of the Local Authority, the circumstances are such as to allow of such disinfection being reasonably required:

For prescribing the mode in which such cleansing and such disinfection are to beeffected.

If the owner, lessee or occupier of any such place does any act in contravention of the regulations of a Local Authority under this Article, or fails in any respect to observe the same, it shall not be lawful for him or any other person at any time thereafter, until further Order of the Privy Council, to hold a market, fair, sale, or exhibition of animals in that place, or to use that lair or place for animals, and the holding therein of any market, fair, sale, or exhibition of animals, and the use of that lair or place for animals, shall be and the same is hereby prohibited accordingly.

C. L. PEEL.

Extracts from British and Foreign Journals.

EFFECTS OF CARBOLIC ACID ON THE URINE.

THE external use of carbolic acid has become so general in the treatment of wounds that any unusual appearance which may attend its application deserves some notice. Physicians had

observed that the urine is sometimes of a very dark colour in cases of poisoning by carbolic acid; but there are few, if any, records, except in German literature, of the same effect having been produced by the application of the acid as a dressing. M. Kirmisson, as *La France Médicale* informs us, has supplied a number of facts, chiefly from the practice of Professor Verneuil, confirming the statements of the German surgeons. In the great majority of cases the peculiar, almost inky colour of the urine is the only change which can be detected; but when the carbolic-acid dressing has been applied to wounds involving large synovial or serous surfaces, the effects are often severe, and may be fatal. If urine containing a large proportion of carbolic acid be exposed to the air the change of colour is not observed. This renders it probable that the discoloration is produced by some transformation of the carbolic acid through the agency of atmospheric oxygen. The practical point, however, established by M. Kirmisson is, that the change of colour in the urine is not of itself a serious symptom, its chief value being a notice to the surgeon that the strength of the fluid employed must be considerably reduced. Very serious accidents, such as coma and convulsions, have been produced by neglect of this precaution.—*Medical Examiner.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, WEDNESDAY, JULY 31ST, 1878.
Lord Skelmersdale (in the chair).

VETERINARY COMMITTEE.

The Hon. W. Egerton, M.P. (chairman), reported that the committee had received the balance-sheet relating to the grant to the Brown Institution to defray the costs of experiments into pleuro-pneumonia, and other diseases, up to the end of 1877, and that Dr. Burdon Sanderson had resigned his position as Professor-superintendent of that institution, but that he would still take an active part in its management, and would continue to serve on the Committee. This report was adopted.

METROPOLITAN EXHIBITION.

Colonel Kingscote (Chairman) reported that the committee had considered the prizes for foreign-bred cattle and sheep, and adopted a certain schedule. They recommended also that prizes should be given for foreign hops.

The committee had accepted with thanks a grant of £200 from the "Shorthorn Society" for shorthorns bred in any European country other than the United Kingdom, and a grant of £210 from

a local committee for prizes for hops grown in the United Kingdom. This report was adopted.

The Secretary was authorised to sign and seal an agreement with the Ecclesiastical Commissioners for the occupation of land at Kilburn as a site for the Metropolitan Exhibition next year.

Metropolitan Agricultural Exhibition.

We are enabled by the kindness of the Secretary of the Royal Agricultural Society (H. W. Jenkins, Esq.), to lay before our Continental and other Foreign readers in particular a List of the Foreign breeds of Cattle and Sheep, for which prizes will be offered at the Grand Agricultural Exhibtion to be held in the Metropolis next year. The prizes, with the exception of those awarded to Shorthorns, are offered by the Mansion House Committee, and will be adjusted on a most liberal scale. The prizes for foreign shorthorns are offered by the "Shorthorn Society of Great Britain" and Ireland. In an early issue we hope to be able to give the several amounts which will be awarded to the different races, and at the same time to furnish valuable details of information to intending exhibitors.

Cattle.—Foreign Breeds.

Prizes.

Shorthorns.—*Bred in any European Country other than the United Kingdom.*

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

* Two Champion Prizes will be given for the best Shorthorn Male and the best Shorthorn Female in the Exhibition (whether Foreign or English).

Charolais.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

Garonnais.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

Limousin.

Bulls, two years old and upwards.
Bulls not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

NORMAN.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

BRETON.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

DUTCH AND FLEMISH.

Bulls, two years old and upwards.
Bulls not exceeding two years old.
Cows three years old and upwards.
Heifers, not exceeding three years old.

SWISS.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers not exceeding three years old.

SPANISH AND PORTUGUESE.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

ANGELN.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

JUTLAND.

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

OTHER FOREIGN BREEDS (for meat-producing purposes).

Bulls, two years old and upwads.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

OTHER FOREIGN BREED (for milking purposes).

Bulls, two years old and upwards.
Bulls, not exceeding two years old.
Cows, three years old and upwards.
Heifers, not exceeding three years old.

The Cows entered as in-milk in Classes and must be milked dry on the evening of July —, in the presence of an officer of the Society.

No Third Prize will be given unless at least Six entries be exhibited, and no Second Prize will be given unless at least Three entries be exhibited, except on the special recommendation of the Judges to the Stewards of Stock.

SHEEP.—FOREIGN BREEDS.

MERINO.

Ram.
Pen of Five Ewes or Gimmers.

PURE LONG-WOOLLED SHEEP (not Merinos).

(Of any English or Foreign race, bred in any Country except the United Kingdom.)

Ram.
Pen of Five Ewes of Gimmers.

GOATS.

Males.
Females, in-milk or in-kid.

No third prize will be given unless at least six animals be exhibited, and no second Prize will be given unless at least Three animals be exhibited, except on the special recommendation of the Judges to the Stewards of Live Stock.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE summer quarterly meeting was held at the Queen's Hotel, Leeds, on Thursday, the 18th ult., the President, Mr. S.F. Fallding, in the chair; the following members were also present, viz., Jas. Freeman, W. Edmundson, J. W. Anderton, Jas. Cuthbert, J. S. Carter, J. H. Ferguson, J. L. Faulkner, R. W. Murdoch, J. Bale, J. M. Axe, Peter Walker, D. R. Sowerby, and the Secretary.

Professor Walley, Mr. Pallin, 20th Hussars; Mr. Jas. Howell, Rochdale; Mr. P. Deighton, of Riccall; and Messrs. Robertson and Crabb, Leeds, were present as visitors.

Excuses for non-attendance were received from Messrs. Dray,

Jno. and W. G. Schofield, Josh. and Jno. Freeman, M. E. Naylor, W. G. Scriven, and Thos. Pratt.

The President proposed and Mr. Anderton seconded the election of Professor Jno. W. Axe as a member of the society; carried unanimously.

Mr. Phillip Deighton, of Riccall, York, Mr. Fredk. Danby, of Baintown, Mr. Dreffield, and Mr. E. P. Dwyer, of Leeds, were nominated for membership.

Mr. Freeman exhibited the head of a foal affected with hydrocephalus, which he had successfully extracted from the uterus of a draught mare, the circumference of the head being 36 inches.

Mr. Pallin exhibited the atlas and dentata of a troop horse. The animal whilst scratching its head with the hind foot suddenly fell down and died almost instantaneously. The attachments of the two vertebræ were severely lacerated, and the spinal column distorted and depressed, the atlas being completely wrenched from its position.

Mr. Murdoch exhibited two specimens of disease of the heart occurring in his practice recently; in one case, vegetating endocarditis of the right ventricle and tricuspid valves, with secondary thrombi formed on the vegetations, detachment of thrombi with pulmonary embolism as a consequence, and the formation of secondary pulmonary thrombus; hæmorrhagic infarction, degeneration, and abcesses were the appearances presented.

In the other case there was dilatation and calcification of the aorta, and posterior aorta at its origin, and as a consequence hypertrophy of the heart.

Professor Walley exhibited and described the appearances of a very interesting case of thrombus of the post. vena cava in a cow, accompanied with hypertrophy of the liver and left kidney.

Mr. Pallin related the history of a case of rupture of the aorta, with granular deposition in the coats of the vessel.

Professor Walley then read the following able and instructive essay "On Blood Extravasation to the Superficial Parts of the Body, its Causes, Consequences, and Treatment."

In considering the subject of extravasation of blood, I shall only draw your attention to a form of hæmorrhage which is very commonly met with in practice; which sometimes causes much embarassment to the practitioner, and not infrequently unpleasant and serious results to the patient. I refer to superficial extravasation, within (intra-cutaneous) or under (subcutaneous) the skin, within (intra-muscular) the muscular tissue; under the sole (subsolar); under the wall of the foot; under and within the visible mucous membranes (sub- and intra-mucous), and into superficial bursæ.

The only predisposing causes of superficial hæmorrhage which we need notice are an altered condition of the walls of the vessels from altered blood crasis producing an hæmorrhagic tendency, as seen in rheumatic purpura, purpura urticaria, and purpura hæmorrhagica. The hæmorrhagic diathesis is seldom hereditary in animals, it is nearly always acquired; once established, however, it may remain throughout life. Those causes which so largely predispose to hæmorrhage in the internal organs, as fatty and calcareous degeneration, do not so much influence the production of superficial hæmorrhage; certainly a septic or depraved condition of the blood predisposes equally to external and internal bleeding, so with the vessels of new tissues.

The actual or determining causes in all animals, are direct injury by blows, contusions of all kinds; especially crushing from enforced recubation for long periods, or from constant friction and jolting in railway and sea travelling.

The characters of superficial hæmorrhage, especially with regard to its colour changes, are best observed in mucous membranes and in white skins.

If the extravasated blood is venous, the colour is dark at the outset; if arterial, a bright red; in either case it ultimately becomes dark from non-oxidation, and subsequently the colour changes are those (with which, I imagine, you are all well acquainted) which may be seen in the contused or black eye of the human subject.

In intra-muscular hæmorrhage there may not be much external enlargement, but there will be much interference with the action of the involved muscle or muscles; in the case of the limb causing stiffness or lameness. If it is under the skin or in bursæ swelling is marked; while if it is intra-cutaneous the swelling is prominent and abrupt and the hair is erect.

In any case the swelling may be increased peripherally by infiltration of serum.

In intra- and inter-muscular and intra-cutaneous hæmorrhage the parts are comparatively hard and unyielding, while in subcutaneous and bursal hæmorrhage we have either pitting, resilience or fluctuation, depending upon the quantity of blood and its condition, and as to whether it is diffused or circumscribed. Heat may or may not be present, or if absent at the outset, may be produced in the subsequent changes.

The amount of pain will depend largely upon the extent of the hæmorrhage, the character of the structures, and the temperament of the patient; if the blood is thrown into parts where there is an abundance of connective tissue, or into loose flaccid bursæ mucosæ, the pain is comparatively slight; but on the contrary, if it is extravasated underneath, tense aponeurosis, thecæ, or capsules, or if it presses upon large veins, the pain is often extreme.

Tenderness is most marked when the extravasation has been produced by a sharp blow; under no circumstances is it so observable as in speedy cut—the slightest touch causing the animal to evince unmistakeable evidence of pain.

Characters.—One of the best physical evidences of subcutaneous hœmorrhage, where the blood is partially coagulated, is crackling (resembling that of emphysema) on the application of pressure; this is produced by the forcing of small coagula of blood from one areola of the connective tissue to another, and to breaking down of the dividing septæ.

The exploring needle is invaluable in the diagnosis of hæmor hagic swellings, and it still further aids in determining the source of the bleeding, *i.e.* whether arterial or venous; and the subsequent changes which the blood undergoes. Moreover it always gives a certain amount of relief, and from the shape of the puncture no fear need be entertained that air will gain admittance to the imprisoned blood.

The physical characters of hæmorrhagic swellings vary materially with the changes which the extravasate subsequently undergoes, *i.e.* whether it remains fluid, coagulates and becomes organized, absorbed, or degenerates.

The constitutional effects of healthy superficial hæmorrhage are in the great majority of cases of no moment, but if the hæmorrhage is extensive, the same symptoms will be developed as in internal hæmorrhage, for although the blood is not actually thrown out of the body, it is for a time as good as lost to the system.

Constitutional symptoms will be largely regulated by the amount of pain and tenderness.

The subsequent physical changes in hæmorrhage will depend upon the alterations which take place in the extravasate. If it undergoes gradual absorption the skin assumes its normal condition, and the heat, pain, and tenderness subside. If a cyst is formed the active symptoms pass off and fluctuation is established, while if it degenerates and forms an abscess the active symptoms increase in intensity until the pus is evacuated.

If the blood remains fluid and tends to degeneration it will be found on using an exploring needle to become darker in colour from non-oxidation and gradually becoming sano-purulent.

In depraved extravasates as in purpura hæmorrhagica the skin frequently gives way, ulcerates, and allows of the evacuation of the blood, or, in extreme cases, large sloughs are formed.

In rheumatic purpura the extravasate usually becomes absorbed or in bursal or arthritic extravasation undergoes organization and forms polypi which may remain connected with the wall of the burse, or may become detached, undergo calcareous changes and

form floating bodies: its most marked characteristic is its metastatic nature. In purpura urticaria absorption nearly always takes place, but here too metastasis is marked. In healthy extravasation within, or under, mucous membranes absorption usually takes place, though some of the serum may, and frequently is, squeezed out and escapes by the natural outlet of the part. In unhealthy extravasation, ulceration and sloughs are the most frequent results, followed by cicatrisation.

In subsolar extravasation extensive suppuration may be established, or the blood may be simply infiltrated into the interstices of the hoof, and be gradually removed with each successive shoeing.

In laminal extravasation suppuration is not so frequent, but the fluid portions become absorbed, while the solid undergo molecular degeneration, interfere with the nutrition of the laminæ and the hoof, and produce separation or seedy toe. Either in laminal or sub-solar extravasation, fistulæ, phlebitis, thrombi, or systemic multiple abscesses may be established if the blood is in a degraded condition or the animal exposed to adverse influences. If air gains admittance to the extravasate it may undergo putrefaction, but it must not be assumed that the admission of air is absolutely necessary for the establishment of this process; no air can permeate the skin of the ox, and yet putrefactive collections of matter are formed in large quantities as the result of unhealthy extravasation in foot and mouth disease; neither can air penetrate the horny tissues of the foot, nevertheless putrefaction goes on here likewise.

The results of bursal or subcutaneous hæmorrhage where neither absorption or suppuration takes places are as follows.

The extravasate becomes surrounded by a layer of organized fibrin or condensed connective tissue, encysted as it was once called, and forms a serous mass or a hæmatoma. The cyst wall is composed partly of condensed connective tissue, partly of organized material formed from lymph thrown out from the vessels of the surrounding connective tissue (as the result of irritation) and, partly, as was demonstrated by Prescott Hewett, of the iunermost layers of the clot which, being in close apposition to the healthy structures, most speedily undergo those changes which lead to organization and conversion into membrane. The cyst wall (as is observed in capped elbows, knees and hocks) may, by successive depositions of layers of fibrine on its inner surface, become of a great thickness; the fluid parts of the blood by the contraction of the fibrine, are forced into the interior of the cyst and become decolorized or the fluid may remain (owing to the breaking up of the red corpuscles) of a dirty brownish red colour and of a comparatively thick consistence even after the lapse of years.

Very frequently large quantities of the red corpuscles, with a

little fibrine become massed together, and surrounded by, or enveloped in, a thin layer of coagulated fibrine, which may be attached by a delicate pedicle to the internal wall of the cyst; or, the whole mass may float free in its cavity forming a kind of detached hæmatoma; in either case crystals of colouring matter in the shape of plates may become developed in the mass, and ultimately become completely calcified, constituting a species of loose or floating osteophyte. This calcifying process is a long one, and proceeds most rapidly if small recurrent hæmorrhages take place from the cyst wall. In some instances the whole of the contents of such cysts are absorbed, their walls collapse, and form a slit or cicatrix, the surrounding structures becoming pigmented, and not infrequently hæmatoid in crystals are found deposited in them.

The last result of extravasation of which we need take cognizance here is suppuration: the coagula break down, suppurative inflammation is established in the surrounding tissues, and the area of the original abscess becomes considerably extended.

Treatment of subcutaneons and intramuscular ecchymoses.—If the attention of the practitioner is directed to the case immediately on the infliction of the injury, the most radical plan of dealing with it is to apply cold, by means of loose bags of ice, or bandages saturated in refrigerant and anodyne solutions. One of the best solutions for this purpose is Liquor Plumbi and Arnica Tincture; moderate pressure, and friction, are also very beneficial.

If attention is not early directed to the case, a totally different line of treatment is called for, the irritated nerve fibrillæ must be soothed and the tissues relaxed, and the parts kept of their normal temperature, or even warmer, by persistent hot fomentations, with the occasional application of mild, stimulating, and anodyne liniments, as ammonia and turpentine, or soap-liniment with laudanum. In the case of the limbs, the most effectual method of fomentation is the application of a flannel bandage wrung out of hot water, with a dry one or a piece of gutta-percha tissue applied over it.

If the tension is great, and much pain is evinced, puncturing with the exploring needle will usually give immediate relief.

Direct incision into the ecchymosed tissue for several days is not advisable, more especially if there is an entire absence of fluctuation, but once fluctuation becomes thoroughly established, and there is no evidence of absorption, the imprisoned blood must be evacuated, otherwise suppuration or the formation of a cyst will follow. In the removal of a fluid or semi-fluid extravasate, it is very unwise to make a small incision, it only irritates the parts, and even though the fluid may be temporarily

drained away, the aperture will rapidly close, and the fluid re-collect. A free, bold incision is by far the best, the bug-bear of blood poisoning as the result of putrefaction of the clot and absorption of the putrefactive products into the circulation need not be thought of, as practically no such result follows the evacuation of an extravasate, providing the system of the animal is healthy, and the surrounding air pure.

Even if putrefaction of the extravasate does go on, it does not necessarily follow that septicæmia will result; I have frequently evacuated large and numerous extravasates containing quarts of putrefied and putrefying matter, which has lain for many days under the skin, without any such result. After the incision, the blood and fluids should be carefully and thoroughly evacuated, without resorting to any violence, otherwise secondary hæmorrhage, from injured vessels, or absorption of putrefactive matter from raw surfaces, may take place.

The sac should be thoroughly syringed out with a mild solution of carbolic or salicylic acid, and a small pledget of tow, saturated in creasote or carbolic liniment, inserted between the lips of the wound, with a bandage carefully and evenly applied over the whole, so as to compress the walls of the sac, and favour the adhesive process, and at the same time prevent the admission of air. It must not be forgotten that in extensive hæmorrhages blood is temporarily lost to the system, consequently general treatment, as the administration of stimulants and styptics must be adopted, perfect rest enjoined, and good food allowed.

In the treatment of subsolar or laminal extravasation, all the horn must be removed, several incisions made into the infiltrated structures, and the foot immersed in warm water for as long a time as possible, and subsequently dressed with carbolic oil and poulticed.

In the treatment of blood cysts several courses may be adopted:—

1st. Tapping of the cysts, and injection with iodine solution or carbolate of glycerine, with the application, where practicable, of a compress.

2nd. The insertion of a seton through the whole length of the cyst, and saturating it with an irritant.

3rd. A free incision throughout its whole length, removal of the lining membrane by dissection and scarification of the internal wall, subsequently treating it as a common wound.

4th. A tolerably bold incision into the most dependent part of the cyst, and the introduction of a skein of tow saturated with creasote liniment, changing it once or twice a day, and continuing its use until signs of adhesion are evidenced.

Which of these methods of treatment should be adopted

must be determined by the special circumstances and characters of the case; but in my experience no method has been so productive of good results as free incision, thereby converting the cysts into common wounds.

It sometimes happens that in old cysts the amount of adventitious deposit is so great as to leave a large tumour after the evacuation of the fluid contents, in these cases it is better to remove the whole mass at once by abscision.

A short discussion followed the reading of the paper, in which Messrs. Freeman, Axe, Pallin, and other gentlemen took part. Mr. Pallin said that he had successfully punctured capped hocks and other bursal enlargements with a small trocar, injected Tinc. Iodinii, and applied a thick coating of pipe-clay to exclude the air.

Mr. Howell after making a few observations upon purpura hæmorrhagica, complimented the essayist upon the practical utility of this paper, and moved a vote of thanks to Professor Walley, Mr. Freeman seconded, and it was carried with acclamation. Professor Walley returned thanks and an interesting meeting was finished.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The usual Quarterly Meeting of the above Association was held at the Blackfriars Hotel, on Friday, July 19th, 1878. Tedbar Hopkin, Esq., in the chair. The following gentlemen were present:—Professor T. Walley, Veterinary College (Dick's), Edinburgh; Messrs. P. Taylor, W. A. Taylor, A. Lawson, M. J. Roberts, E. Faulkner, and Mr. Hillich, of Manchester; Messrs. G. Morgan, R. Reynolds, and D. Hutcheon, of Liverpool; W. Cartwright, Whitchurch; W. Bromley, Lancaster; W. Dacre, Altrincham; G. Darwell, Northwich; T. Marshall, Huntingdon; J. Bunnell, Oldham; H. Bean, Macclesfield; J. B. Taylor, Ashton; H. Ferguson, Warrington; W. Whittle, R. Worsley; and the Secretary.

Letters were read from Professor Pritchard, G. Heyes, W. Hart, Tom Taylor, M. E. Naylor, John Kenny, A. B. Wren, and C. Elam, stating their inability to attend the meeting.

The Secretary proposed Mr. B. Wood as a member of the Association, seconded by Mr. M. J. Roberts. Carried.

Mr. Peter Taylor, in bringing forward his motion (viz. that the subscription be raised from 10*s.* to 20*s.*), said—he did not wish to press it; what he required was to get at the feeling of the meeting, and such being the case, he would allow it to stand over until the next meeting. He would, however, propose that the presi-

dent do advertise in the papers for a reporter to attend the meetings, as he was sure much valuable information was lost in consequence of not having a shorthand writer; seconded by W. A. Taylor, and carried.

The "Fleming Testimonial Fund" committee gave in their reports, which were in every way satisfactory.

Mr. A. Lawson proposed, and *Mr. W. A. Taylor* seconded, that the committee continue their executions until the next quarterly meeting, and the secretary be enjoined to write and ask the secretary of the Central Veterinary Association what course they intend to adopt with regard to their subscriptions.

Mr. E. Faulkner then read the report of the electioneering committee of the Lancashire Veterinary Medical Association :—

"July 19th, 1878.

"Your committee appointed at the last quarterly meeting to act conjointly with the committees of the Yorkshire, Liverpool and Midland Counties Associations, in order to secure the election of representatives of the four societies to the Council Board of the Royal College of Veterinary Surgeons, have to report that so far as the election of the representative of the Lancashire Society was concerned, your committee regret exceedingly that they have to report failure.

"At a committee meeting held April 12th it was decided to ask Mr. Peter Taylor to nominate Mr. Whittle; Mr. Taylor wrote a letter nominating Mr. Whittle on the following day, April 13th. On the 18th April Mr. Taylor received a letter from the secretary of the Royal College of Veterinary Surgeons, dated the 17th, to the effect that his nomination of Mr. Whittle had arrived too late for acceptance as the notice had expired on the previous Monday Mr. Taylor telegraphed to Mr. Coates, his protest against the non-acceptance of the nomination, as the letter was posted in Manchester at 7.45, on Saturday evening, the 13th April, in time sufficient to reach London by Monday morning's post. Your committee deem it unnecessary to enter here into full particulars of the proceedings they thought fit, to take in their endeavours to obtain the acceptance of the nomination. They sent full proof of the postage of the letter to the legal adviser of the Royal College of Veterinary Surgeons, but unfortunately that gentleman's decision was adverse to the desire of the committee in so much, he stated, that proof of delivery of the letter at the office of the Royal College of Veterinary Surgeons, before the expiration of the notice, was not proved, and consequently the nomination could not be accepted. Your committee beg respectfully to record their great regret to Mr. Whittle, and trust that he will on another occasion allow himself to be placed in nomination."

Professor Walley then read an able, interesting and exhaustive paper on "Tubercle," at the commencement of which he referred to a former essay of his, read at one of the meetings of the West of Scotland Association.

After alluding to the vast importance of impressing this subject upon veterinary surgeons and stock owners, and the great necessity which still exists for more careful inquiry into its nature and character, he acknowledged that his ideas had undergone very material change, that he did not now regard the deposit in glanders in the horse as a form of tubercle—glanders being (as also tubercle) a disease of itself (sui generis).

While the loss caused by many other diseases, such as epizootic aphtha, rinderpest, zymotic pleuro-pneumonia is patent to all, we are prone to overlook the slow but certain decimation of many of our best herds by tubercle. Besides the pecuniary loss attending the disease, there is a great danger of tubercle itself being transmitted to man, by the consumption of flesh of animals affected by the malady. Had the vast importance of "tubercle" been patent to our legislators, they would not have omitted it in their Contagious Diseases (Animals) Acts.

Although some of the domesticated animals may be free from its ravages, few are proof against the inoculative contagion. He noticed, in passing, the almost, if not total exemption of the horse from tubercle.

In speaking of the nature and characteristics of tubercle, he considered it identical in man and the ox—all doubts being set at rest by the inoculation of animals with tubercle taken from the human subject; he also dwelt upon the hereditary nature of the malady, and the evil consequences of breeding from any tainted stock; further, he touched upon some of the predisposing causes—such as in-and-in breeding—as followed in many of the fashionable breeds; too fine breeding, early breeding, feeding upon grasses grown on land where extensive artificial manuring had been employed, and forcing animals for show purposes.

In speaking of its specific nature, the Professor regarded it as a manifestation and result of a constitutional diathesis, or, in other words, the local manifestation of scrofulosis; not of a lymphatic origin, or due to proliferation and degeneration of connective tissue corpuscles—or the absorption of broken up matter from caseous centres as believed by some. The Professor's reasons for the above conclusions were ably demonstrated and defended.

The diagnosing of tubercle during life, with no coinciding and collateral circumstances to guide the surgeon, is extremely difficult; but the Professor's practical hints and suggestions as to the various

symptoms manifested, depending upon the organs affected, were most elaborate.

How tubercle kills, and the various morbid products with which it may be confounded in its different stages, were severally dealt with. The Professor's paper closed with a short review of the latest theories in regard to certain cell growths.

In the discussion which followed, general testimony was borne to the great benefit that would accrue to the profession at large if the general body of professors would only communicate the result of their scientific investigations and research, as so kindly done by Professor Walley on this and many other similar occasions.

The discussion was animated and prolonged, and in it a good many of the members joined, the principal being—Mr. P. Taylor, R. Reynolds, D. Hutcheon, W. Dacre, W. A. Taylor, W. Bromley and Mr. T. Hopkin, the President, the principal subjects being—the great difficulty of diagnosing the disease during life; the almost total absence, in many cases of distinctive symptoms; whether the flesh was fit for human food, even after being well cooked; the rarity of tubercle in the horse; its propagation by fashionable breeds becoming tainted and its great prevalence in certain districts; the advisability of "tubercle" being included in Contagious Animals Acts; and the means which would tend to check its development. Treatment was considered as being only useful in man.

Professor Walley, in conclusion, said, The causes often require combination of circumstances, and that formerly there was more interchange of sires; that it is a specific and distinct disease and peculiar to the ox; is infectious and, by inoculation, contagious, and is propagated by ingestion of milk, flesh, and tuberculous material. In the miliary or chronic form it is slow in its growth, and rapid in the secondary or infective forms, and in the last its clinical results are similar to pyæmia. He considered the cause of the disease to be—1st. Tubercular deposit; 2nd. Inflammation of the surrounding tissue; and 3rd. Degeneration.

A cordial vote of thanks was proposed by Mr. Briggs, and seconded by Mr. W. A. Taylor, to Professor Walley, which was carried unanimously. A vote of thanks to the President closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE Fifty-sixth Quarterly Meeting of the Association was held at the Medical Institute, Hope-street, on July 22nd, 1878. Wm. Whittle, Esq., president, in the chair.

There were present Messrs. Morgan, Reynolds, Elam, Cave, Thos. Leather, Moore, Stevenson, Chisnall, and Ellis, of Liverpool; Professor Walley, of Edinburgh; T. Greaves, T. Taylor, W. A. Taylor, Hopkin, Faulkner, Locke, Roberts, and Wolstenholm, of Manchester; H. Barnes, Malpas; W. Dacre, Altrincham; Darwell, jun., Northwich; W. Woods, Wigan; H. Ferguson, Warrington; Roughsedge, St. Helen's; D. M. Storrar, Chester; N. M. Barrron, Sutton; Polding, Bury; Lewis, Tarporley, Langford, veterinary student, and the Secretary.

Letters of apology for non-attendance were received from Professor Williams, Messrs. G. Fleming, E. Nuttall, John Kenny, A. J. H. Thornley, W. A. Cartwright, C. E. Ogden, C. Cartwright, J. P. Rothwell, W. Hutchinson, B. Kettle, Jas. Freeman, W. E. Brown, and A. B. Proctor.

The minutes of the previous meeting were read and confirmed.

Messrs. James Watson, Liverpool, and W. H. Roughsedge, St. Helens, were unanimously elected members of the Association. The following gentlemen were nominated for election as members at the next meeting of the Association, viz., Messrs. Chisnall and Stevenson, Liverpool, and Lewis, Tarporley.

Professor Walley, before reading his paper, said he wished to give a brief description of a case of what he had considered wa "purulent inflammation of the uterus of a cow," which he had seen a day or two ago in company with Mr. Bampfield Kettle, of Market Drayton, under whose treatment she was.

The patient was a white cow, which had been observed to be dull and languid since about the month of March last; about eight days ago she ceased giving milk, and her abdomen became greatly enlarged on the right side. The temperature, pulse, and mucous membranes were normal; on examination per vaginam the uterus was found to be twisted.

Diagnosis.—A collection of fluid in the uterus.

The cow latterly had become weak and unable to rise; the rumen tympanitic, to relieve which we introduced the trocar, but there being little relief from this operation, and the uterus being twisted, we resolved to puncture the uterus from the side, when immediately on the withdrawal of the trocar there was an escape of purulent matter. Mr. Kettle on seeing that it was pus suggested the desirability of having it measured, which we did, and found the quantity to amount to twenty-two gallons, independent of a considerable quantity which escaped before we could obtain a vessel to receive it.

The pus which came away at the first was sweet and of a creamy colour and consistence; but the cow chanced to alter her position, and in doing so she dislodged the canula, and on re-introducing it by means of the trocar, the fluid which came away

appeared much thinner, as if a different sac had been punctured; presently, however, the different fluids appeared to blend. On examination *per vaginam*, immediately after the withdrawal of the fluid, we were somewhat surprised to find the position of the uterus altered.*

Professor Walley next read his paper on "Slough-carbuncle, Boil, and Erysipelas in the Coronet and Pastern, with the treatment of Quittor." The Professor in a very lucid manner described the causes, symptoms, and distinguishing characters of the several diseased conditions treated of in his paper, briefly indicating the general principles of treatment to be followed in each, entering more in detail into the treatment of that unwelcome visitor to every veterinary surgeon's establishment—quittor. He said that after having tried caustics in every variety and form of application, he found no remedy so satisfactory as vertical section with the *actual cautery*. Where the cartilage was diseased, he considered it futile to attempt to remove the diseased portion only; it was necessary, in his opinion, to remove the whole of the cartilage.

Mr. Greaves said that wounds of the feet were a most important part of a veterinary surgeon's practice, and he would have rejoiced greatly if Professor Walley had been able to bring before them, as a result of his medical research, the knowledge of some agent which they could have applied with confidence in its remedial efficacy to those inveterate wounds and diseased conditions so frequently met with in the region of the horse's foot.

In those unhealthy wounds situated in the coronet and laminæ, arising from the parts being crushed or bruised, and sometimes involving the whole of the laminæ from the solar surface to the coronet, he said, you may carefully remove the horn, but they do not heal. You then combine constitutional treatment with your local remedies, but healthy action is not established. You poultice, apply every variety of caustic, combined with alterations of the shoe and varying positions of the

* This will be readily understood from the description of the *post-mortem* examination, which Professor Walley kindly sent soon after his return, although he could not so easily account for it at the time, being of opiniou that the fluid was in the uterus itself. The following is a copy of Professor Walley's letter descriptive of the *post-mortem* appearances. He says, "On my return to Market Drayton, at the end of the week, I found the cow dead. Mr. Kettle had made a *post-mortem* examination and preserved the uterus, its contents and connections, for my inspection. We found that the collection of pus was not in the uterus, as we had thought, but in an extra-uterine abscess connected with the wall of the right cornu. The wall of the abscess was in one part two and a half inches thick, and of cartilaginous consistence; from six to eight gallons of pus still remained in it, making, at a moderate computation, about thirty gallons in all. The uterus and vagina were otherwise healthy."

limb, and with no better results. You try bandaging, and again you leave it bare, but notwithstanding all your efforts, some cases will continue to go on from bad to worse until finally they end in canker. He (Mr. Greaves) was rather disappointed that Professor Walley, in his descriptions of the treatment of these diseased conditions, had not taken sufficient notice of the collateral agents necessary to be adopted in all such cases, such as the best position of the limb, and the most applicable form of shoe; when it was advantageous to poultice, and when to cauterize; when a bandage was beneficial, and when it was better to leave parts uncovered, &c. Any man, said Mr. Greaves, who could discover a remedy that would be at once both quick and powerful in the treatment of such cases as he had referred to, would deserve the united thanks of the whole veterinary profession.

Mr. Tom Taylor said, that as quittor, when established, was intractable to treat, we ought to direct our attention as much as possible to its prevention. One great cause of quittor in his experience was in the shoeing smith, when fitting his shoe, allowing the wall of the hoof at the heels to overlap the sole, and the pressure of the shoe on the parts producing a suppurating corn, very often ending in quittor. In the treatment of quittor, when the sinuses communicate with another, you may destroy the canal by caustic injections, but he had a great objection to the use of caustic plugs, as you could not regulate their action, open joint being liable to follow their insertion into a deep sinus. He believed that a great deal of the success in the treatment of such cases, was due to constant attention and the system of frequently varying your caustics; one is apt to get tired and somewhat careless of such cases when they have been long under treatment.

Mr. Welsby agreed with Mr. T. Taylor that constant attention and a careful adaptation of the shoe were great auxiliaries in the treatment of such cases. He had found most success in the treatment of quittor to follow a bold but considerate use of the actual cautery; he had seen a number of bad cases of quittor arising from corns, but found them comparatively tractable when early and energetically treated. He had not experienced much difficulty in the treatment of sloughs in the coronets and pasterns, and he disagreed with Professor Walley in its being either necessary or beneficial to segregate the diseased parts with caustic in sloughs and erysipelatous inflammation, as recommended by him in his paper.

Mr. W. A. Taylor said that a professor from the fact of his elevated position was supposed to enjoy special and peculiarly favorable opportunities for investigating the nature of the

disease and its various remedies, and to be possessed of equally special powers to enable him to take full advantage of such opportunities where they arose, consequently the onus of a professorship was no light matter. He was always expected to know a little more than an ordinary practitioner, and to be able to tell them something new concerning almost any matter which he (the professor) might elect to bring before them. It was possibly an idea somewhat akin to that had pervaded their own minds on coming to hear Professor Walley's paper in the present instance, and because he had not altogether come up to their exaggerated conception, and brought to light the real philosopher's stone, which was to heal all by a touch, that they felt a cause for being dissatisfied, and meant to express that dissatisfaction by a severe criticism of what he had given them.

He then referred to the great importance of the collateral treatment in all diseases of the feet, as nature herself, when properly assisted, did a great deal. He considered that a great stumbling block in the way of the successful treatment of quittor was a defective diagnosis, and a tendency to treat every case as if the cause was always the same. He further referred to the difficulty of being always able to diagnose with accuracy whether the cause was caries of bone, ulceration of cartilage, or disease of the lateral ligament. The treatment must vary as the symptoms alter; he condemned deep vertical firing as being both cruel and unscientific. He had also considerable difficulty in accepting the theory advanced by Professor Walley, that a certain kind of slough, called by him "Munching sloughs" situated about the legs and heels of cart horses, were produced by the animal himself biting the parts; he was of opinion that the bite was only a slight exciting cause, and that the predisposing and principal cause of the sloughs was the irritable and inflamed condition of the limb at the time, doubtless due to the practice in that part of the country, as related by Professor Walley, of riding the horses through sea water at the conclusion of their day's work, the reaction after the cold, and the irritation of the salt setting up a local inflammatory action.

Mr. Dacre described a mode of applying the actual cautery in the treatment of quittor, which he had witnessed the application of, by a professional friend of his in France. The instrument was a pyramidal-shaped puncture iron, with a platinum point; the part operated on was the outer aspect of the coronary band of the near fore foot; this he punctured with the above instrument over the entire surface of the affected part, the punctures being about a quarter of an inch apart; and although he had not an opportunity of witnessing the result of this treatment, the gentleman expressed himself as being perfectly confident of its

success. The principle was the same as in firing vertically, viz., the destruction of the sinuses; but if it was equally successful, it was certainly preferable as a mode of operating. He had very little experience of quittor in his present practice, but he had formerly used with very good results a plug of nitrate of silver. Speaking of sloughs he had seen some cases where the animal apppeared to suffer very great pains, becoming quite unable to stand, and had to be put in slings; but, like Mr. W. A. Taylor, he did not agree with Professor Walley that what he termed "munching sloughs" were due principally to the animal biting his own legs. Hot fomentations, poultices, &c., were his mode of treating them, until the sloughs came away, and then treated them as a common wound.

Mr. C. W. Elam said, he had considerable experience of quittor, and had tried almost all the known forms of treating it; but he considered that the employment of the actual cautery was one of the most effectual remedies that he had ever tried. In cases arising from a suppurating corn, and where the heel of the pedal bone was injured or diseased, he generally found that by passing a small circular firing iron through the heel he effected a cure. Referring to the question of cruelty, he did not consider that anything was cruel which was done with a humane desire to alleviate suffering and cure disease, and was the best known remedy to effect that purpose.

Mr. Hopkin said, that he was sure that they were all much indebted to Professor Walley for the able manner in which he had brought such an interesting and practical subject before them, notwithstanding the somewhat severe criticisms with which they had assailed it. As to the treatment of quittor, the most efficient remedy that he had ever tried was a paste made of sulphur and sulphuric acid, and painted over the part; it brought out a very effective slough and seemed to excite healthy action in the adjoining textures. As to the wounds in the feet, referred to by Mr. Greaves, where the laminæ were injured from the solar surface to the coronet, arising from pricks or other causes, he considered it better not to cut out the whole of the portion of the wall, covering the diseased laminæ, but to make an opening in the wall in two or three places. He did not consider that erysipelatous inflammation was very common in the horse.

Mr. Reynolds referred to the criticisms advanced by some of the members present, as to the want of detail and the absence of specifics in Professor Walley's paper; he said that as practitioners they wanted *principles*, not *nostrums*, and he considered that Professor Walley had acted with a wise discretion in the construction of his paper in keeping to the former and avoiding the latter. As to the treatment of quittor, a professional friend of his, who

had a very extensive practice, and great experience in the treatment of quittor, employed the actual cautery in a very bold manner, in fact, he was what might be termed a rough operator; his custom was to fire vertically quite through the coronary substance. And what appeared to him (Mr. Reynolds) as the most remarkable fact connected with this mode of operating was, that it was never followed by open joint, and was almost invariably successful. He thoroughly agreed with Professor Walley that where the cartilage was diseased it was necessary to remove the whole of it.

Mr. Woods did not resort to the use of the actual cautery in the treatment of quittor until he had tried more simple remedies; but when he had an intractable case to deal with he generally resorted to the actual cautery in the end.

Mr. Morgan said that he had often found sloughs very intractable, especially in old horses where the constitution was weak and debilitated, many of them even died from the acute pain and inflammatory fever. As to quittors, a great number of them arose from the bad shoeing, pricks, &c. He considered that firing was one of the best remedies, when deep and effective. As to the cruelty of the operation, he did not consider that any operation was cruel, when it was necessary and advantageous; and he considered that the administration of chloroform to the horse was in many cases very unsatisfactory. In fact, where you can fire or operate on an animal without casting him, it is less cruel than to go through the operation of casting and fastening him in order to administer chloroform. He considered that peoples' sympathies were very much misdirected in regard to the subject of cruelty to animals, and this was mainly due to the fact that the principal advocates of the doctrine were mostly old maiden ladies, who had very large hearts, but very little mental capacity to discern what was or was not an act of cruelty.

He considered that their thanks were due to Professor Walley for coming down amongst them, and interchanging ideas with them. He was of opinion, that while the professor could doubtless teach them a good many things, they, on the other hand, could contribute to the professor's knowledge many practical facts which could not be so readily picked up in private studies. Home-made professors were not the best, and he would be glad to see the professors coming out among the veterinary medical associations more than they were in the habit of doing.

Mr. Greaves wished to remove an impression from Professor Walley's mind, which he might have formed concerning the remarks which he (Mr. Greaves) had made at the commencement of the discussion—viz. by expressing his regret that the Professor did

not enter more minutely into what might be termed the mechanical part of the treatment of the diseases of the feet, but while that was true, and he as an old practitioner placed great value on these collateral agencies, at the same time he thoroughly endorsed the sentiments of appreciation, which other members had given expression to, in reference to the character and construction of his very valuable and suggestive paper. In reference to the question of cruelty, especially as applying to the operation of stripping the sole, in the treatment of the canker, the operation was undoubtedly a most painful one, but when he had seen success follow the operation in twenty-eight or twenty-nine cases, after various dressings for a period of eighteen months, he had no hesitation in resorting to it in the interests of humanity itself. Of course in such cases the animal requires to be cast, and consequently there is no excuse for omitting to give chloroform. In the treatment of quittor, he was in the habit of first trying to destroy the sinuses by injections of a saturated solution of sulphate of zinc or other liquid caustic, and if that did not succeed he fired.

Professor Walley, in reply, said: In reference to those intractable wounds of the feet mentioned by Mr. Greaves, he was of opinion that they were of the nature of canker from the commencement, and he did not believe that we could cure canker by an external dressing, as he considered that it was due to a constitutional diathesis, and consequently fresh canker cells would be produced almost as fast as they destroyed them, and even when they seemed to have arrested their development, and healed the part in one foot, the disease is very apt to break out in another. Therefore it is this constitutional diathesis existing in the system at the time the injury to the foot has been inflicted that causes these wounds to take on this cankerous character. He considered that bandages to wounds of the feet did more harm than good, although in most cases it was advisable to exclude the atmosphere by some kind of adhesive dressing. As to the difficulty of accurately diagnosing the exact cause of quittor, referred to by Mr. W. A. Taylor, he could not understand how any gentleman of any professional experience found any difficulty in coming to an accurate conclusion as to the cause of quittor if he attended to the commonly recognised means of diagnosis. In reference to what, for want of a better name, he had termed "munching sloughs," he had taken considerable trouble to watch those animals which were subject to these sloughs, and he had witnessed the animal bite his leg, and in the very place he had found a slough to follow as a consequence. He admitted that there might be considerable heat and irritation of the limbs as a result of the practice which he had referred to of walking

the horses through sea water at the close of their day's work, especially as a great number of them had a large quantity of hair on their legs; but he did not consider that it amounted to what could be termed inflammatory action. He referred for proof that biting the limb was of itself quite capable of producing such a result to the practice of boys at school causing considerable destruction of the skin of their hands by sucking the part or rubbing it with their knuckles, and the positive example of the destruction of the skin and subcutaneous tissues resulting from one horse biting another. In answer to Mr. Welsby, he considered it was of great advantage in the treatment of sloughs and erysipelatous inflammation, to segregate the diseased parts by means of caustic from the healthy structures, as sloughs in the coronet had a great tendency to end in quittor unless carefully watched. In reference to the advantage of deep firing in intractable cases of quittor, he instanced a case to which he was called in for consultation. A somewhat inexperienced professional gentleman had charge of it. He (Professor Walley) recommended deep vertical firing, but left the gentleman to operate himself. He called again in a few days, and found that his instructions had been carried out with a vengeance; he had fired both *deep* and *close*, the result being that the piece come out *en masse*. He was considerably alarmed at first, and apprehensive of open joint, but instead of that the case got rapidly well without any more trouble. As to the complaint made by some of the gentlemen that he had not taken sufficient notice of the mechanical or collateral treatment of these diseases, it had been in a great measure his principle aim, in the construction of his paper, to avoid doing so. *First*, because he considered that they were fully as well acquainted with these contrivances and auxiliaries as he was; and, *secondly*, because he considered that to have done so would have appeared like offering an insult to their professional knowledge and experience, and treating them on the same level as he would a class of students. As to his having such splendid opportunities for investigating the power and remedial efficacy of every new agent that was being discovered, he begged them to remember that he had his living to make as well as themselves, and that although he endeavoured to make good use of his head, and to take every advantage of the opportunities which his position gave him, he had also to labour with his hands, which materially limited that time for quiet research which some of his friends imagined a professor enjoyed.

A general conversation here took place in reference to the best means of administering chloroform, and of watching its effects. After which,

Mr. A. Taylor, in rising to propose a vote of thanks to Pro-

fessor Walley for his very able paper, said, that he (Professor Walley) must look upon their free and somewhat unsparing criticisms as evidence of the interest which the subject and his mode of treating it had created in the minds of the members present. On such a practical subject it was impossible, and even undesirable that they should all completely agree. It was a virtue rather than a fault, in the arrangement and construction of his paper, that it should be the means of eliciting such a variety of opinions as had been enunciated that night. I am sure, therefore (he added), that I only express the unanimous opinion of each gentleman present when I say that we are all very much indebted to Professor Walley for his very valuable and instructive paper. I beg, therefore, to move a hearty vote of thanks to Professor Walley. The motion was seconded by Mr. Faulkner, and carried by acclamation.

A vote of thanks was then accorded to the President, and the meeting adjourned to the Adelphi Hotel, where a substantial tea was partaken of. The cloth being removed, and a little of what is said to make glad the heart of man being introduced, the usual loyal, patriotic, and professional toasts were given and responded to, and a most enjoyable and harmonious evening was spent.

D. Hutcheon, *Hon. Sec.*

Veterinary Jurisprudence.

MIDLAND CIRCUIT.—WARWICK.

August 7th.

Nisi Prius Court.—(Before Mr. Justice Fry and a Special Jury.)

RICHARDSON *v.* OLDHAM AND ANOTHER.

This was an action against a firm of solicitors for negligence.

Mr. Buzzard, Q.C., and Mr. Hugo Young appeared for the plaintiff; Mr. Meller, Q.C., Mr. Dugdale, and Mr. Clifford for the defendants.

The plaintiff is a livery stable keeper, carrying on business at the Victoria-mews, Leamington; the defendants are solicitors, also carrying on business at Leamington. In January, 1876, two horses were left at livery with the plaintiff by a Captain Fox. A considerable amount being due to the plaintiff for the keep of the horses, Captain Fox told the plaintiff to hold the horses as security. But on the 20th of June 1876, one of them was claimed by

a Mr. Mostyn, a horse dealer in London, who gave notice to the plaintiff not to part with the horse to any one but himself; and shortly afterwards commenced an action against the plaintiff for possession of the horse and damages for its detention. Meanwhile the plaintiff had brought an action against Captain Fox; and on June 29th he obtained a judgment in that action for £61 5s. The plaintiff alleged that the defendants had negligently advised him that he had a lien on the horse claimed by Mr. Mostyn, which he had a right to exercise in spite of the notice Mr. Mostyn had given him; and also that they had instructed the sheriff to execute a writ of *fi. fa.* which the plaintiff had issued for debt and costs in his action against Fox, by selling Mr. Mostyn's horse without giving the sheriff notice of Mr. Mostyn's claim, so as to enable him to interplead. Mr. Mostyn's horse was sold by the sheriff on August 5th for £73 10s. The other horse, which was in reality the property of Captain Fox, was also sold and realised £50; and there was horse clothing of considerable value, the property of Captain Fox, in the possession of the plaintiff. The defendants acted as solicitors for the plaintiff in the action of "Mostyn *v.* Richardson" till the case was nearly ready for trial, when they refused to act for him any longer. It was further alleged by the plaintiff that in the course of the preliminary proceedings in that action the defendants had advised the plaintiff, as a precaution in case of ultimate failure, to get an old stamp and draw up a fictitious agreement, dated more than six months back, assigning his business to his son, and to alter the initials on the stable buckets and other furniture to those of his son, so that they might not be seized for costs. The plaintiff also said that the defendants had told him that the sale of Mr. Mostyn's horse was the result of a mistake of the sheriff's officer, who acknowledged that he was answerable.

All the material assertions of the plaintiff were contradicted by the defendants. Their evidence was to the effect that the plaintiff had misinstructed them; that they had never advised the sale of the horse; on the contrary, they had advised him that he had no lien; nor had they advised the defence of the action of "Mostyn *v.* Richardson," which they had always urged the plaintiff to settle; nor had they represented that the sheriff was liable for the sale of the horse; nor had they neglected to give him notice of Mr. Mostyn's claim. They also most emphatically denied having given the plaintiff the alleged fraudulent advice as to the transfer of his business to his son, and explained that their reason for ceasing to act for the plaintiff was that he persistently refused to act on their advice. To support their case the defendants relied to a great extent on the plaintiff's letters and other documentary evidence.

After a very long trial, in which a number of details were contested, of which it is impossible to give a report, the *jury* found a verdict for the plaintiff; damages, £385. Judgment accordingly; execution stayed.

DEATH OF A PONY BY HANGING WHILE BEING SHOD.

At the Bradford County Court, before Mr. W. T. S. Daniel, Q.C., the judge, John Milner, greengrocer, &c., Saltaire Road, Shipley, brought an action to recover £20 from John Hodgson and Company, shoeing and blacksmiths, Shipley, as damages for causing the death of a mare which had been sent to them to shoe.

Mr. Berry was for the plaintiff, and Mr. Terry appeared on behalf of the defendants.

From the evidence of the plaintiff it appeared that he had a mare pony which, though quiet in harness, was very restless when being shod. On Shrove Tuesday he took the pony to be shod at the shop of the defendants, who had shod it on two previous occasions, and therefore knew its temper. They said that they would manage it. The plaintiff could not stop, as he had several places to call at. He took the pony about one o'clock and called at Hodgson's house about eight o'clock at night. He told Hodgson and his partner that he had not been home since he left the pony. Hodgson asked him if he did not know what was the matter, and when he replied "No," Hodgson said that the pony had hung itself. Hodgson and his partner told him that they had tied the mare up tightly to a stall, and they placed a pole on the ground at its hind quarters, leaving just room enough for the animal's body. While putting on the first fore shoe the pony's hind leg slipped, and as its head was bound up so tightly it could not get up. Hodgson's partner, John Raisbeck, said that he had told Hodgson it would hang itself if it was left in the position in which it was, and Hodgson replied that it would not. Hodgson's partner also told him that he told Hodgson several times that the mare would hang, and asked him to loose her. When this was done, the mare fell down and died immediately. Next morning he (plaintiff) went to the yard with Mr. Horner, veterinary surgeon, who examined the pony's carcase and said that it had been strangled. An endeavour was made to settle the case with the defendants, but they said they were advised that they were not liable, and declined to do anything. The carcase was sold for 12s. The pony originally cost the plaintiff £15 12s. Evidence was called in support of the case.

Mr. Terry, for the defence, contended that all reasonable care had been taken in shoeing the mare, which was of a very restive temper, and that her death had resulted from an accident. John Hodgson and John Raisbeck, the partners, were examined at some length. They said that they had twice before shod the pony in question. Raisbeck said that the last time it was brought a strap was put round its neck and it was tied to the stall. It would have about sixteen inches' "play" from the stall side. The shoeing commenced about five o'clock, and the

mare was dead about half an hour afterwards. He did ask his partner to loose the mare, and he asked him because it was different from what it had been before, and it "rattled" in its throat, and made a curious noise. He did not say to Hodgson that it was hanging.

Hezekiah Gilbert, blacksmith, Shipley, deposed that on one occasion the pony was sent to him to be shod on the hind feet. The pony was very restive, and it took him three hours to put one shoe on. He sent the animal home, and did not put on the other shoe.

William Proctor, blacksmith, Bradford, was examined, and deposed that it was usual with him to tie up horses with leather straps similar to that used by the defendants.

His Honour, in giving judgment, said that the defendants in undertaking to shoe the mare were bound to exercise care, proper skill, and judgment. He was satisfied that the animal was a difficult one to shoe, and required great care in the operation of shoeing. One of the witnesses had sent the pony home, refusing to complete the work, and the defendants, knowing the animal, that was the course which they should have adopted. He had to consider whether the defendants had been guilty of such an amount of negligence and carelessness as to make them liable, and he had come to the conclusion that on the whole the matter must be treated as an accident. The inherent vice was in the animal itself, and although no such thing as contributory negligence could be imputed to animals, there was a case in which consideration was given to the conduct of a horse during its passage on board a ship. He thought, therefore, that the death of the animal was attributable quite as much to its own vicious temper as to the defendants' want of skill, and the verdict would be for the defendants.

Mr. Berry, on behalf of the plaintiff, asked that no costs should be allowed, and his Honour made an order accordingly.

COMPENSATION FOR SLAUGHTER OF CATTLE-PLAGUE ANIMALS.

EXCHEQUER DIVISION.—July 31.

(Before Baron Huddleston.—Cases for further consideration.)

BANISTER *v.* THE LOCAL AUTHORITY FOR MIDDLESEX.

This was an action brought to recover compensation in respect of loss sustained by the slaughtering of a herd of cows under the Contagious Diseases (Animals) Act.

Mr. Day, Q.C., and Mr. Petheram appeared for the plaintiff, and Mr. Serjeant Parry and Mr. A. L. Smith represented the defendants.

The plaintiff was a cowkeeper and dairyman at Willesden, and

the defendants were the Local Authority for the district. In April, 1877, the cattle plague broke out upon the plaintiff's premises, and before a representative of the defendants reached the farm one cow died. The Privy Council was communicated with, and the plaintiff's farm was placed in the charge of certain persons nominated for the purpose, and in the course of a week 158 cows had died or were killed. The jury found, at the former trial, that the value of the cows was £19 15*s.* 4*d.* each; that four cows had died, that sixty of the cows were killed because they had disease, and ninety-four were killed owing to their having been in close proximity to the diseased animals. The question was now raised as to how much compensation the plaintiff was entitled to under secs. 68 and 69 of the Act of 1869.

The Plaintiff contended that the defendants were bound to pay him compensation in respect of the sixty cows which had the disease, at the rate of half the value of the cows, but not exceeding £20 each, and in respect of the remaining ninety-four compensation at the rate of three fourths of their value, not exceeding £30 each.

The Defendants, on the other hand, contended that in respect of the sixty cows they had power under the Act peremptorily to fix the price at whatever figure they thought proper, provided it did not exceed the sum named in the Act; and that with regard to the ninety-four cows, they had power to fix the price themselves, or to appoint an arbitrator, as they should think fit; that they appointed an arbitrator, but the plaintiff refused to go to arbitration; and that they were not bound, therefore, to pay him anything at all.

The Plaintiff, in answer to the latter contention, said that an arbitrator was appointed under the Act, and that he was ready to abide by his decision, but the defendants upon their part refused to recognise him as such.

Baron Huddleston decided that the plaintiff was entitled to compensation at the rate of half the value of the sixty cows, and three fourths of the value of the ninety-four cows. He would give judgment for the plaintiff for £1677, which was the amount of compensation due to the plaintiff, less £309 paid into court in respect of the sixty cows. If it should be necessary he would stay execution, in order that the defendants might appeal upon a matter of so great importance.—*Daily News.*

PARLIAMENTARY INTELLIGENCE.

CONTAGIOUS DISEASES (ANIMALS) BILL.

HOUSE OF LORDS, *Friday, August 9th.*

ON the motion for the consideration of the Commons' amendments to the Bill,

Earl Fortescue expressed his gratification, as the President

of the Central Chamber of Agriculture, who had pressed her Majesty's Government to legislate on this important subject at the success of their labours. He considered that the measure was likely to be a very valuable one, but confessed that he had felt a little indignant at the calumnies and misrepresentations of the motives of the promoters of the Bill which had been freely indulged in both in and out of Parliament, and especially at the insinuations which had been thrown out to the effect that the measure was an interference with free trade, which he regarded as clap-trap to discredit the foreign policy of the Government. Not only had the Central and other Chambers of Agriculture, but numerous farmers' clubs throughout the country, altogether disclaimed supporting the Bill upon protectionist views, but had advocated restriction upon importation, simply with a view to prevent millions' worth of property being destroyed. He looked forward to a large increase in the number of native cattle consequent upon the prohibition of the importation of live animals, and to a consequent decrease in the price of meat, observing that that increase was already observable in Aberdeen and other parts of Scotland. He expressed himself strongly in favour of slaughtering cattle near the places where they were bred, and sending them up to the metropolis as dead meat, rather than subjecting them to the deteriorating process of transit while alive, which he described as more cruel to the animals than vivisection. It had been estimated that each animal lost at least eight pounds of solid meat, exclusive either of bone or horns, during the transit. What was required was cold storage, and if a good system was once established, he was quite confident that it would be found better to send dead meat to the metropolitan market than live beasts. He defended Government interference in this matter, and regretted that the cry of a return to protectionist principles had been raised against the Government, not only in respect to this but other Bills relating to adulteration, interference with lodging-houses, and so on; but he was convinced that the good feeling of the country would set itself against this foolish outcry about interference with trade.

Earl Spencer joined in congratulating the Government on the passing of the Bill, but protested in the strongest manner against the observations made by the noble earl that the Opposition had raised a cry of returning to protection against the Government for the purpose of damaging them in respect to their foreign policy. He inquired of the Government whether the veterinary department in Ireland, who exercised the same powers there as the Privy Council did here, would be strengthened.

Earl Fortescue did not wish to make any general charge against the Opposition, but he must say that he considered that many persons who spoke on the subject of the Cattle Bill, both in and out of Parliament, had been guilty of using clap-trap arguments.

The Duke of Richmond and Gordon said that he need hardly

repeat that he believed the measure would prove to be of a very useful character, and for the benefit alike of the producers and consumers, therefore he should be much gratified when it received the Royal assent. He reminded the noble earl that the department over which he presided had no jurisdiction in Ireland, but that it was left to the Privy Council in that country to deal with the matter. He was not able to answer the noble earl's question on the subject of the veterinary department, but he might depend upon it that the Government desired to have that department as strong as possible.

The report of amendments was then agreed to.

ROYAL COLLEGE OF VETERINARY SURGEONS.

FELLOWSHIP DEGREE.

A SPECIAL MEETING of the Court of Examiners, appointed by the Council of the Royal College of Veterinary Surgeons for the examination of candidates for the Fellowship Degree, was held July 31st, when the following gentlemen, having produced their certificates, underwent the Educational, Written, and Oral Examinations, obtained their diplomas, and were admitted Fellows of the Royal College of Veterinary Surgeons:

Mr. Chas. Joseph Whitworth . .	London.
— Andrew Spreull. . . .	Dundee, Forfarshire.
— Osborn Joseph Hills . . .	Leamington.
Capt. Benjn. Hill Russell . .	Grantham.

QUESTIONS.

COMPARATIVE ANATOMY.

1. State the chief differences observed in the respiratory organs of mammals, birds, reptiles, and fishes.
2. Describe the differences observed in the arrangement of the digestive organs in ruminants, rodents, and birds.
3. Describe the circulation of the blood in reptiles and fishes. Mention any points in which they resemble and differ from the circulation in the mammalian fœtus.

PHYSIOLOGY.

1. Describe briefly the distribution and functions of the pneumogastric nerve. State what symptoms are produced by the division of both pneumogastric nerves in the cervical region.
2. Name the channels by which waste products are eliminated from the body; and state by which and in what form the nitrogenous elements are excreted.
3. How is the animal heat produced? State how it is influenced by the nervous system.

Pathology.

1. Describe rhachitis. What are its causes, and in what animals is it most frequently observed?
2. What is the nature of scrofula, and how is its presence in animals manifested? Give the derivation of the term.
3. Describe and compare the principal effects of acute inflammation occurring in the mucous, serous, and synovial membranes, taking for illustration the conjunctiva, tunica vaginalis, and synovial membrane of the coxo-femoral articulation.

Therapeutics.

1. Enumerate the primary and chief secondary constituents of opium, commencing with the most active, and give indications for the exhibition of this drug.
2. What are the therapeutical uses of the ergot of rye, and what accidents may occur from its injudicious administration?
3. Describe the physiological action of digitalis, and its uses as a medicinal agent.

Surgery.

1. Mention the structures involved in a severe case of cervical abscess (poll-evil), and give an outline of surgical treatment of the same.
2. Describe the various methods of performing the operation of castration in the horse; mention the treatment preparatory and subsequent to the operation, and also any possible serious consequences that may arise.
3. Give the surgical anatomy of the inguinal canal, and the method of operating for the cure of inguinal hernia.

Dietetics.

1. Mention the chief alimentary principles of food. State the purposes they severally fulfil in the process of nutrition. Describe the changes they undergo in digestion, pointing out the agencies by which these changes are effected.
2. Describe the chemical changes which have taken place in "mow-burnt" or "heated" hay, and the evil results which may follow its injudicious employment as food.
3. What are the chief chemical constituents of beans, and which of them render these most valuable as food?

Sanitary Science.

1. Mention the sanitary precautions to be observed with a view to the prevention of abortion in the mare and cow.
2. What are the insalutary influences which are supposed to lead to the development of tuberculosis in animals?
3. What are the principal requirements of a well-constructed stable?

Epizoötiology.

1. What is influenza? What influences are supposed to produce it, and on what agencies is its geographical extension supposed to depend?
2. What is anthrax? How does it usually manifest itself in animals? To what is its presence due, and how is it extended?
3. Describe the sanitary police measures most appropriate for the suppression of an extensive outbreak of rabies.

OBITUARY.

It is with much regret that we announce the death of Mr. William Farrow, M.R.C.V.S., Whitechapel, London, which took place on July 30th. Mr. Farrow, who had obtained the good old age of 71, commenced the practice of his profession nearly fifty years since, his diploma being dated Feb. 18th, 1830.

MISCELLANEA.

HYDROPHOBIA A DELUSION.

"An American reporter recently questioned the superintendent of the New York dog-pounds respecting the liability of his assistants to be attacked with hydrophobia, as they were frequently bitten by the dogs brought to the institution."

"Mr. Mac Mahon, however, and his assistants disbelieve in any such disease; and the former observed—"There ain't no sich thing. I have been bitten by dorgs a hundred times and never got a sign of it. Tell you what it is—a man jest gets bit by a dorg, and he is a weak-minded sort of a man, and takes on dreadful because he is bit by a dorg. He just then works himself into hydrophobiar. There ain't no such thing as hydrophobiar. It's jest imagination, and a man who ain't got no gumption gits it. Can handle all the dorgs that ever was an' defy 'em to give me hydrophobiar. It's all a mistake, and people dunno' what they's a talkin' about when they say a dorg's bit does anything of the kind."

ERRATUM.

In our last issue the residence of Mr. Sidney Villar, the successful candidate for the scholarship of the Royal Veterinary College, was given at Staplegrove, Devon. It should have been Staplegrove, Taunton, Somerset.

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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By John Henry Steel, Demonstrator of Anatomy at the Royal Veterinary College.

(*Continued from p.* 568.)

Summary.—On the Measures adopted recently in Paris to prevent Outbreaks of Rabies, from M. Bouley's *Chronique* in the *Recueil de Méd. Vét.* for 15th August, 1878. Also from the same, M. P. Cagny's Suggestions on the Use of the Elastic Ligature. From the same journal for 30th August, 1878, on the Coming Elections to Chairs in the French Veterinary Schools, and M. Megnin's communication to the Société Centrale de Médecine Vétérinaire, on Vegetable Parasitic Organisms. From the *Journal de Méd. Vét. et de Zootechnie,* M. G. Chénier's Conclusions on the Causes of the Prevalence of Glanders in the French Army.

Paris, it seems, is now labouring under a hydrophobia panic, which originated in the usual manner, the sensational articles in newspapers upon some well-known man who has fallen a victim to Rabies. M. Bouley's *Chronique* for 15th August comments upon and gives the measures adopted in the present case. He says, "The first condition to insure

observance of police regulations is that they be not too stringent, and in consequence are approved by the majority of the population. When they demand too much and worry the public, experience shows that they remain uncarried out, because the public opposes to them the "force of inertia," against which the agents of authority feel themselves powerless, and against which they soon cease to struggle. We have just seen this in Paris. In spite of the order making the muzzle obligatory for all dogs a great number remained free from that restraint, and almost all upon whom it was inflicted did not seem to be much constrained by it since they retained the power of barking, which implies that of biting, since the dog can bark only by opening and closing the jaws. As for bull-dogs (which were subject to special restrictions as being very dangerous) the measures directed against them do not seem to have had much effect, for the agents who knew them in their respective quarters, and who knew them to be as inoffensive as other dogs, have abstained from exacting from their proprietors execution of excessive and useless regulations." At first an ancient measure of 1845 had been again brought into force; it is to this the above remarks allude. It was rescinded as soon as possible, and the Minister of Agriculture and Commerce substituted for it a circular, dated 19th July, 1878, recommending certain resolutions to be applied by all Préfets; from the letter accompanying the resolutions we extract: "This year the accidents caused by rabies have been more numerous than usual; they have shown that the disease is one of those which it is always imprudent to neglect, and that measures which will prevent its development must be constantly executed at all times and in all places. Perhaps we must attribute the difficulties which have been experienced to want of uniformity in the measures adopted, and to the fact that certain among them, the obligatory use of a muzzle for example, may be considered of doubtful utility. So it is necessary that by the simplicity of their instructions, agents may know their duty, and the public may be subjected to the least possible amount of restraint. This is the point of view of the matter taken by the 'Consulting Committee on Epizootics' in their study of this question which they have undertaken at my invitation. I am dependent upon their advice for the preparation of a regulation (arréte), which will be adopted simultaneously by you and your colleagues, and which, comprising only essential restrictions, nevertheless will give sufficient guarantee of safety. The project I send you with this seems to me to realise the necessary conditions.

Its value is evident, but I shall nevertheless somewhat explain it. Rabies certainly finds its principal elements of propagation among stray dogs, which exist in large numbers in all towns, and in Paris alone cannot be estimated at less than 20,000 individuals. Here is a serious danger, and one which is always imminent, for we know Rabies shows itself at all times of the year, and even, contrary to a wide-spread opinion, it is not in the summer months it attains its greatest activity. It is of the highest importance, therefore, to get rid of this population of stray and vagabond dogs, and to prevent it from reappearing; this should be our chief aim. It should be attained by destruction of all dogs not marked with the name of their proprietor. This is provided by Article 2, of which I have spoken first. To decide that public roads shall be absolutely forbidden to all dogs except those led in leash, is a measure which may be prescribed in centres of population, but is scarcely susceptible of general application. But we may exact that everywhere dogs shall be furnished with a collar bearing the name and residence of the owner. No one can plausibly object to this, and those who wish to keep dogs must submit to it. The collar will thus bring the owner in relation with the administration. It shows that the animal has a master who exercises over it a certain care, and who, constantly liable to penal or civil responsibility on this account, ought to be careful to prevent the accidents which the animal might cause. By this measure, which is not extreme, proprietors will be compelled by their interests to give the aid of their personal vigilance to the authorities, and the prospect of serious responsibilities which their negligence might involve them in, would be to them a powerful motive to prevent their dogs from straying when circumstances lead them to fear the danger of contagion. But the measures prescribed in the first two articles would not guarantee the public security, since dogs bitten by a mad dog may become, and indeed, too often do become, the agents of the propagation of the disease, the germ of which has been inoculated into them, the duty of authority is to order, without exception, and with the greatest rigour, the slaughter of all animals of the canine and feline species which labour under suspicion of having been bitten. The mayors must not yield to objections on the part of the proprietors. At once when a dog has been bitten, or there are reasons to believe that he has been bitten, he must be pitilessly slaughtered; no consideration ought to save him from this fate. The mayors have all the necessary powers in the matter. It has been ruled that

'since a police regulation commands the slaughter of certain dogs bitten and suspected to be mad, it is binding even on the owner who keeps his dog, thus bitten, shut up in his own home.'

"'*Resolution.*—1. Every dog passing along a public road in liberty, or even led, ought to be furnished with a collar bearing the name and residence of its proprietor engraved on a metal plate.

"'2. Dogs without such a collar, and stray dogs with or without such a collar, whose owner is unknown in the locality, shall be seized and slaughtered without delay; in no case shall they be sold.

"'3. Running dogs, when hunting, are excepted from the action of the above, but they ought to bear the owner's mark.

"'4. Dogs and cats, when mad, or which have been bitten, or are suspected to have been by mad animals, shall be immediately slaughtered.

"'5. Infractions on the rules of this resolution shall be proved by examination of witnesses, and referred to competent tribunals.

"'6. Mayors, Commandants of Gendarmes, and Commissioners of Police, Park and Forest Rangers, are charged to execute this resolution, which will be published and posted in every commune.'"

Such is the "Arréte" now in force in Paris. M. Bouley approves of its measures, considers it right that rigid use of the muzzle should not be exacted, and suggests again, as he has already done at the Société Centrale Vétérinaire, the establishment of a *Société protectrice contre la Rage Canine.* He tells us also "That dog owners may give authorities their efficacious assistance by proper vigilance one condition is necessary—that the different modes of manifestation of Rabies should be known, especially the initiative symptoms, so that they may take due precautions against the disease before it becomes dangerous. Therefore the *Consulting Committee of Public Hygiène* has just prepared an "Instruction on Rabies," to popularise the knowledge of the symptoms of the disease in all its stages. The *Préfet de Police* has happily had this posted on all the walls of Paris after the Arréte, in accordance with the project which the minister proposed to him. It is an excellent measure, and more efficacious than is generally supposed."

These measures seem to us very useful and likely to materially lessen the prevalence of Rabies, but we fear many of them would be considered too stringent for the "liberty of

the subject" on this side of the Channel, but they may prove instructive to us and useful in case of emergency.

At the meeting of 8th August, 1878, after reading a paper on Verminous Epizooty of young Pheasants, M. Megnin brought forward certain considerations of diseases due to vegetable parasites. He says, "At the meeting of the fourteenth of February last, I made a communication to the Society on the differential characters which the *Tinea tonsurans* of the ox and that of the horse present, though these diseases have been hitherto considered identical. Relying upon the difference of colour of the crusts, of the appearance of the hairs affected (which in the one case are broken, in the other torn up completely), and above all, on the size of the spores of the Trichophyton, which in Tinea in the horse do not exceed $\frac{2}{1000}$ mm., and in the Tinea of the ox are nearly $\frac{5}{1000}$ mm. or $\frac{6}{1000}$ mm., I have concluded that these fungi are of two distinct species, one peculiar to the horse, dog, and cat, for which I keep the name *Trichophyton tonsurans* the other peculiar to the ox, to which I give the name *T. decalvans* (or better) *T. depilans;* both of these are communicable to man. It may be objected (and among others M. Peroncitto, of Turin, has done so) that the differences which the two fungi present may result from the differences in the soil on which they grow, and that hence they are not of distinct species. I have made an experiment on this point; I have grown the two fungi on the same soil. I proceeded thus: On three horses, four, five, and six years old, I tried inoculation of the Trichophyton of the ox by simple friction at the roots of the hairs with crusts of the Tinea of the ox. These succeeded only in the case of the six-year old animal. A month after inoculation ringworm patches of about the size of a five-franc silver piece appeared at the seats of inoculation. These parts were swollen to about two or three millimètres above the level of the healthy parts (a feature never seen in Tinea of the horse), then they became covered with moist crusts, yellow, and surrounding the hairs which became detached entirely, leaving a red, moist, glistening surface. And in the crusts the microscope demonstrated the Trichophyton in abundance, and with all the characters of that of the ox, the sporules being $\frac{5}{1000}$ to $\frac{6}{1000}$ mm. in diameter. I will add that this latter Tinea is much more difficult to treat than the ordinary one of the horse. Indeed, whilst the latter readily yields to mercurial frictions, or even to simple scratching, the former resists these measures and necessitates the employment of tincture of iodine in dressings repeated during four or five days."

At the same meeting M. Megnin drew attention to the fact that he has obtained *Achorion Schoenleinii* from rabbits. Thus it has been obtained from the following small animals: mouse, rat, cat, dog, and rabbit. "We thus indicate another source of the serious affection children may obtain by playing with small animals."

There seem to be a large number of vacancies in the staff of teachers at the various veterinary schools at present, and it may be interesting to some of us to peruse the following programme of an election committee meeting (*Concours*), which will be held at the Veterinary School of Toulouse, on Monday, 21st October, 1878, for the Chair of Anatomy of Domesticated Animals and the External Anatomy of the Horse, at present vacant at that School.

"1. Preparation of a *mémoire* on a complex question of Descriptive Anatomy and Histology.

"2. Lecture on a question of Descriptive Anatomy made on a preparation dissected by the candidate.

"3. Lecture on a question of General Anatomy and Histology. Recognition of Histological specimens.

"4. Lecture on a question of General Teratology. Recognition of some particular forms of Monstrosities.

"5. Lecture on a question of the External Conformation of the Horse.

"6. Preparation for the microscope of specimens illustrating the Structure of Tissues and of Organs.

"7. Examination of a Horse in relation to External Configuration.

"The Committee (*jury*) will determine the time it may consider necessary to allow for the preparation of the mémoire, as well as for the lectures, demonstrations, and other tests which the programme comprises."

This will give us an idea of how they elect officers to the veterinary schools in France. We see that each candidate is to forward to the Minister of Agriculture and of Commerce any certificates of fitness for the post he may be able to obtain, and to briefly indicate the scientific work he has published. These will count as in the candidate's favour to the extent the Committee may think proper.

On Monday, 4th November, 1878, an election to the Chair of Surgical Pathology, Operative Surgery, Shoeing, and Clinical Instruction will occur at the School of Alfort; and at the same, on 16th December, 1878, to three Chairs of Natural History and Materia Medica, vacant in the veterinary schools; on 18th November, 1878, at the School of Lyons, to the two Chairs of Pathology of Contagious Dis-

eases, Sanitary Police, Commercial and Medical Legislation, vacant in the two Schools of Lyons and Toulouse.

We see that these are open only to true and naturalised Frenchmen. Some of the subjects for which professors are required, are hardly "dreamt of in our philosophy" on this side of the channel. When shall we attain the advanced state of Natural History, Teratology, and Legal and Sanitary veterinary science in systematic course of instruction? Yet some consider our list of work required from students already excessive! To those interested in this matter we venture to suggest reference to programmes for the other examinations as contained in the *Recueil de Médecine Vétérinaire* for 30th August. We have given the above as an example.

But while on the one hand we may admire the completeness of the course of instruction in France, we must not forget on the other to observe certain signs of routine practice among veterinary practitioners which show too much adherence to stated modes of treatment without due consideration of the ever variable characters of disease. We seem in this country to have been more successful in efforts to free the army service from glanders than they have been in France, in proof of which we may read the following conclusions by M. G. Chénier, forwarded in a letter to Professor CORNEVIN; they show how it is that glanders is propagated in the French army, and are summarised from the *Journal de Médecine Vétérinaire et de Zootechnie.*

"1. Indiscriminate use is made of vesicating agents for all swellings of glands in regimental service. If a first application is not sufficient, a second and many others are resorted to. This treatment is to convince the professional attendant whether the said glands are swollen from glanders or not! It is preferable to *watch* suspicious cases, which from a practical point of view is the best way that can be done; for examination of the number of blood-globules, and experimental inoculation of another animal, are not always available. As for inoculation of the subject itself, which M. Bouley advises in his *Chronique* of 15th February last, I do not believe it ought to give positive results. I remember, indeed, that I had the record of the experiments made by M. Saint-Cyr, which proved that inoculation of virulent glander matter succeeds no more on a glandered horse than inoculation with syphilis virus does on a syphilitic man.

"2. Changes of barrack quarters also contribute much to the propagation of glanders in the army.

"3. The number of places which in each station is appropriated to suspected horses is very small. Rigorous isolation

is here absolutely impossible, hence animals really glandered may communicate the disease to those only suspected. This year the 'Veterinary Sanitary Commission' has required, as urgently necessary, that the number of isolated infirmary boxes be increased.

"4. If instead of putting him in the isolated boxes you place an apparently healthy horse among animals suffering from ordinary diseases of a non-contagious nature, you run the risk of contagion. For glanders may be latent in his system, and may either appear during the stay of the animal in the infirmary (where his successor in the troop stall runs risk of infection, there having been no indication of need of disinfection, and the stall is sure to be immediately after his departure filled up, for cavalry stables are generally crowded), or rest and liberal diet may retard the manifestation of the disease, and the horse return to his former (or a new) place in the troop stable and to his duty in the ranks, until the symptoms of glanders appear. Also, as there are no grounds for suspicion, another horse is placed in his infirmary box, and perhaps another one after this, and thus the disease may be spread, as also by infecting the neighbouring stalls, the drinking bucket, sponge, &c. Generally the disease appears after return to the ranks, hence each infirmary stall should be numbered, and its occupants noted. So if a horse becomes glandered even months after leaving the infirmary, we know what stall he occupied, what horses were near him, which horses succeeded him in the stall, and we know which horses to suspect, and which stall to avoid.

"5. The rules of the veterinary service of the army prescribe burning of all grooming articles which have been used for glandered horses. This does not always answer well, for in the cavalry the same man, often with the same brushes, grooms two or three, and in the artillery sometimes seven or eight horses, and seldom the same ones. Thorough disinfection then in a squadron or in a battery would need destruction of all the grooming articles.

"6. Is regimental disinfection always efficacious? Allowing that chloride of lime destroys glander virus, is a radical disinfection possible in old stables with wooden mangers and racks strongly impregnated with glander poison? To eradicate glanders, such should be replaced by stone troughs and metallic racks.

"'The slaughter of glandered horses in the army is referred to the opinion of a Board in which the veterinary element is in a minority!'

7. "When the disease shows itself in private stables it is

very nearly always brought by troop horses, generally by 'cast' animals. I believe I was the first to draw attention to that fact."

We cannot better conclude this paper than by giving the general observations of M. P. Cagny, of Senlis, on his "Experimental Investigations on the Elastic Ligature." He gives some cases in which he resorted to this means with benefit, as castration and operation for champignon. And then, in the *Recueil de Médecine Vétérinaire*, 15th August, 1878, concludes with the following:

"*General observations.*—A. I employ hollow tubes of caoutchouc of external diameter 8 mm. and internal diameter 5 mm. In my first attempts I rolled the stretched tube around the part to be compressed, an assistant holding one of its ends. Thus, especially during the first turn, we exercise pressure on the organ, which is returned sideways by the stretched band. To avoid this inconvenience I proceed thus: seizing in each hand one of the ends of the tube I pass it under the tumour, then stretching it I raise the two ends and make them intercross above the tumour; if it is large, I give one end to an assistant and then roll up the other; in castration of young calves an assistant is unnecessary. To make the ligature sure I always, again taking the two ends, still stretched, intercross them, and on the intercrossing the assistant places a knot with a piece of string. I then allow the caoutchouc to resume its original proportions, and cut it above the knot, leaving at each end about 2 cm. or 3 cm. It is better not to cut a piece before commencing the operation, as thus we may take too little for each end.

"B. It seems to me useless to stretch the caoutchouc as much as possible, for we seek easy division in consequence of its elasticity. By elongating it too much we make it thin and inclined to cut, which is inconvenient, besides, it may break.

"C. In certain operations, as castration, the fingers and the caoutchouc being dry, the stretching and rolling may be easily done; but in the case of a bleeding tumour, the moist fingers and elastic slip. In human surgery a small instrument is used to remedy this. There is a not very scientific but useful means of dispensing with this; throw dust, sand, or any powder, over the moist hands to prevent the elastic from slipping.

"D. Generally it is better, as soon as the course of the circulation has been interrupted, to remove the part operated upon with the bistoury, leaving only a portion below the ligature;

we thus avoid pressure, and the chances of that excoriation which results when an organ separated from the body rests against the body surface.

"E. The time of separation of the ligature is variable; it depends to a certain extent on the adhesions to the parts, and also on the facility with which the organ allows it to penetrate; this is related to the nature of its component tissues."

"F. The greatest resistance of a part to its action shows best the superiority of the elastic ligature (this resistance depends more upon the organization than on the size of the tumour). Though from a scientific point of view its action is always superior to that of ordinary ligatures, I think the latter should in practice be preferred for removal of small tumours, and for castration of very young animals, for example."

This surgical means seems well worthy of trial in many operations generally performed with the knife, and the profession is indebted to M. Cagny for his zealous and careful investigation of the subject.

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 572.)

The last Order of *Cinchonales*, now to be considered in the Galiaceæ or Stellates, would at first sight appear to have little connection with the Cinchona, though placed therewith by Professor Lindley. De Candolle, Bentham and others, take exception to this view; but inasmuch as we have hitherto followed Prof. Lindley's system, we take the Stellates in this place with the following:—

Diagnosis.—*Cinchonal Exogens, with epipetalous stamens*, straight anthers bursting longitudinally, didymous fruit, and verticilate leaves without stipules.

Whatever may be the position of the order, it is a very natural one, and as it contains an interesting series of native plants, we quote the following notice of it:—

"Galiaceæ. (Stellates, Madder-worts.) A natural order of calycifloral dicotyledons belonging to Lindley's cinchonal

alliance of epigynous Exogens. The order has been sometimes called Stellatæ from the star-like arrangement of the leaves; and by many it is reckoned as a suborder of Rubiaceæ, which is thus made to include both Cinchonaceæ and Galiaceæ. Herbs with whorled exstipulate leaves and angular stems. Calyx superior, the limb obsolete, four- to five- or six-lobed; corolla gamopetalous, rotate or tubular, regular, divided like the calyx; stamens equal in number to the corolline lobes and alternate with them; ovary two-celled, with solitary erect ovules; styles, two; stigma undivided. Fruit, two-celled, with two seeds; embryo in the axis of horny albumen. Natives of the northern parts of the northern hemisphere, and of high mountains in South America and Australia. The order contains some plants used for dyeing and some having tonic qualities. The horny albumen of goose-grass or cleavers (*Galium aparine*) has been used as a substitute for coffee. The root of madder (*Rubia tinctorum*) is employed as a dye, and supplies the Turkey-red; that of *Rubia cordifolia* furnishes the dye called munjeet in India. The leaves of woodruff (*Asperula odorata*) are fragrant when dried. There are ten known genera and about 380 species. Examples—*Galium, Rubia, Asperula.*"*

The *Galiaceæ, Rubiaceæ,* or *Stellatæ,* of different authors, afford four native genera, as follows:—

1. *Rubia.* Fruit large and succulent.
2. *Galium.* Stems quadrangular, leaves whorled, sessile.
3. *Asperula.* Corolla tapering at the base into a tube.
4. *Sterasdia.* Calyx with a distinct border of four or six teeth.

1. The Rubia. Madder is a well-known stellate plant with large leaves and succulent fruit, mostly growing on rocks by the sea side. Our English species differs but little from the exotic form, which is called *R. tinctoria,* and is extensively cultivated as a dye plant. The colour resides in the roots, and is of a rich scarlet.

Mrs. Lankester says: "the dyer's madder comes from the South of Europe, and is cultivated largely for the sake of its roots. Its culture has been tried in England, but as a commercial speculation was unsuccessful, as its price will not compete with that imported from abroad."

2. The Galium are very varied and variable wild plants, of which we have no less than thirteen native species, according to Dr. Syme; of these the *G. cruciata* and *G. verum* have yellow flowers, the rest have more or less white four-

* 'The Treasury of Botany,' pp. 516, 517.

partite corollas. The *G. verum* is called Lady's Bedstraw, upon which we quote the following remarks by the lady already referred to.

"All the species of Galium are commonly known as bedstraws, and we find on inquiring the origin of this name, that at a time before the invention of feather beds, and luxurious spring couches, these plants among others formed the bedding of our ancestors. Dr. Prior gives the name as "our lady's bedstraw," and suggests that it may allude more particularly to the Virgin Mary having given birth to her Son in a stable with nothing but wild flowers for her resting place."

That the dried bedstraws are well adapted for stuffing cushions, packing, &c., we are well aware, and we would suggest that ladies' bed straws as applied to them was to distinguish them from the commoner corn straws once almost wholly employed for the same purposes.

There are two wild bed-straws which demand a little more consideration, namely, the *G. aperine*, commonly called goosegrass, as the chopped herb is the favourite food of the young gulls, and also Clivers, from the tenacity with which the seeds stick to one's clothes. The other is *G. tricorne*, rough bedstraw, in which the seeds often arranged in threes, are roughly tuberculated, while those of the former are more or less hispid with inflexed bristles. Both species are common to our corn fields, though there is reason to think that the *G. tricorne* is of comparatively recent introduction, having been brought from the east in corn and farm seeds. Both are mischievous in corn, and are therefore to be discouraged, to which end the hoe should be in constant exercise; where it is found in any quantity, as Clivers, Cleavers, Hairiff, Clayden, Clites, names of different districts—are not liked in samples of either wheat or barley.

The goosegrass was formerly extolled for its medicinal properties. Our rustics use it not unfrequently for "fining the blood," and for general roughness of skin, doubtless upon the doctrine of signatures, as the whole plant is rough.

The roots of several species contain the same dyeing material as madder. The seeds have been used as coffee, but they are too small and insignificant to be of much use in this way, especially when dried beans or parched peas would be far superior.

3. *Asperula* presents us with two very interesting species, namely, *A. odorata* and *A. Cynanchica*.

The former of these is well known for the delicious haylike perfume it exhales in drying, a flavour which is derived

from a similar chemical substance, common to the sweet vernal grass, the melilot and others, and known to the chemist by the name of *Coumarin*. Gerarde speaks of this and says: "When being made up into garlands or bundles, and hanging up in houses in the heat of summer, it doth very well temper the aire, coole and make fresh the place, to the delight and comfort of such as are therein. It is reported to be put in wine to make a man merry, and be good for the heart and liver; it prevaileth in wounds, as *Cruciata* and other vulnerary herbes do." It is commonly used in wine in Germany, as an ingredient in the celebrated "Mai trank," which has a high reputation for its refreshing virtues. It is a native of our woods, and finds a place in every old garden, having been formerly in high esteem for its perfume, though this is scarcely appreciated until the plant begins to wither. It is known by various names, as Woodrose, Woodrowe, Woodroofe, and is employed by rustics as a puzzle in spelling, thus, double u double o double d r o double u double f double e, makes "Wooddrowffee" of the ancients.

The *A. cynanchica*, called Squinancy or Quinsey-wort, is an interesting little plant common to calcareous uplands; it was formerly much used in medicine, but of late years has entirely fallen into disrepute.

4. The *Sherardia* contains a single species, *S. arvensis*, known as Field Madder; it is common to hedges, banks, and waste places, but it is still more in the corn-fields; it seems to track cultivation almost everywhere, and is doubtless carried about in farm-seeds; we are told that "this genus of plants was named by Dillenius after his patron and friend, William Sherard, LL.D., consul at Smyrna. He was born at Bushby, in Leicestershire, in 1659, and died in 1728. He was a distinguished patron of science, and the reputed author of 'Scholæ Botanicæ,' founder of the botanical professorship at Oxford, and collector of twelve thousand species of dried plants." *

The roots of this plant, like so many of the order, is capable of yielding a dye, and is hence called "field madder" but at present it is esteemed as little better than a common weed.

* 'English Botany,' vol. iv, p. 231.

APPLICATION OF THE ACTUAL CAUTERY

By R. H. Dyer, M.R.C.V.S.

The mania for firing seems on the wane amongst practitioners, who are getting into the "sear and yellow leaf."

Doubtless, several reasons can be assigned for this, such as not liking the trouble and bother, as well as the risk of casting horses for the operation. Another; the question whether other means are not as beneficial, and the results as successful as these produced by the firing iron, and at the same time save the pockets of clients, to say nothing of the loss of service of the animals, when in many cases they could earn their daily food during treatment.

A third reason may be prompted by what may be called *conscience,* which teaches us not to inflict pain upon our patients when it may be avoided.

Such a vast number of essays have been written about firing that it would seem strange if a man could deal with the question in a short paper. We are often told that the majority of practitioners when consulted in reference to diseases affecting the lower extremities of horses at once recommend firing as *the* remedy. This in many instances is done simply from the fact, that a guinea will pass into the pocket of the operator as soon as it is effected, or an entry will be recorded in his day-book; besides, there is always a reputation built up for the time being, that Mr. So-and-So has a great many operations to perform, and he must be considered to have a first-class practice, and so on.

For my part, I can truthfully declare that I have had a fair share of such operations during my professional career, and it must be confessed that uniform success has attended me. Further, that in numerous cases I have fired after other operators had failed to produce what was desirable, viz. a cure, and have succeeded, therefore, it may be inferred that there is something to be gained by firing after all. But the man of reflection and *common* sense will not rest with this kind of practice, especially if he has a spark of honesty in his composition.

There is some excuse for a man recommending the actual cautery for such diseases as he has been in the habit of operating for, and also that many others have so done from time

immemorial; but this does not add much to his character as a veterinary surgeon, if he continues in the same groove his forefathers struck out. The present is an age of progress, and it behoves every man to think for himself.

Although, as I have premised, I have been very successful in effecting *what were termed cures*, by the actual cautery, I have not lost sight of the fact, that these were not caused, or produced, by my exertions alone, but, on the contrary, I was merely the medium in assisting nature to do what is but seldom in the power of man to accomplish by himself. Various remedies have been advertised for the treatment of those diseases, which we find our equine patients so prone to in the limbs, and every one has his own particular, or special nostrum, or remedy. Whether there is any one therapeutic more effectual than another in the removal of such diseases we must, I think, acknowledge that there is another power aiding and assisting us—the Creator and Architect of the Universe.

Where I used to fire scores of horses I now operate upon one only! In short, firing is the exception, and not the rule; and still the result of this change is satisfactory.

I was asked by a gentleman not long ago this question: "Can you tell me why a certain veterinary surgeon said that my horse had spavins, and should be fired, and left with him for the space of two or three months; and after taking him to England, and having the horse examined by a clever veterinary surgeon, it was declared that he had no spavins?" My reply was simply this—that "the man who said the horse had spavins when the animal was free from such disease, must have been a fool or a rogue, or perhaps a little of both."

This is the kind of thing which brings our profession into disrepute, and until the public learn to know that a man is honest, they treat them with disdain.

Much could be said upon this topic, but time forbids.

TESTS FOR ASCERTAINING SOUNDNESS OF WIND IN THE HORSE.

By the Same.

An ancient custom amongst purchasers of horses and examiners as to their soundness, may be said to consist of

coughing by pinching, or squeezing the larynx or upper part of the trachea, and of galloping the animal.

It is an important question for consideration whether these practices are objectionable, or otherwise whether they are injurious to the animal so treated.

In discussing the *first* point, viz. that of "coughing" a horse, it may be fairly stated that serious results are produced by it in some instances.

For example, a horse is taken to a fair or market to be offered for sale, and a score or more individuals may, in the course of the day, look at him, each taking the usual course of squeezing the throat with the idea of testing his wind. Under such circumstances it does not require a very large stretch of one's imagination to suppose that the violence thus offered to the part may give rise to irritability or inflammation of the mucous membrane, or other tissues of the larynx. One thing is certain that the pressure causes the horse to cough, and therefore, it must of necessity produce inconvenience to the animal.

If a strong hand were to pinch the throat a number of times during the day, it would, I think, set up a certain amount of inflammation, which might be attended with a good deal of pain and irritation.

I am inclined to believe that diseases of the air passages, which end in whistling and roaring, may sometimes be caused by this objectionable practice.

If the bearing-rein is said to produce disease, where the pressure is less objectionable and violent than that caused by means of pinching, then it may be assumed that this latter act would be the means of setting up diseased action.

To say the least, it is unnecessary and uncalled for in most cases, and the constant habit ought to be abolished.

I once heard a veterinary surgeon state in evidence that he was in the habit of striking or kicking a horse in the belly in order to test his wind!

There is another point (the *second* alluded to) which, perhaps, calls for a stronger condemnation; it is the mode of galloping a horse.

Some men who ride the horses they are instructed to examine take no account of *condition*, they press the animal just as they would one which was perfectly and thoroughly trained for a race or for hunting.

Surely, this cannot be right?

I know some examiners who are said to be good men in testing wind, and are famous for rejecting horses for whist-

ling, and their friends declare that they are to be depended upon for this especial qualification.

When we consider for a moment that but few animals offered for sale are in training, or have had work enough to undergo such a severe trial as that of being galloped for two or three miles, carrying from twelve to fourteen stone, we need not be surprised that this mode of testing the wind will, in numerous instances, so interfere with respiration that certain abnormal sounds will be produced, and the victims of such injudicious riding be rejected.

Take any ordinary man who has been out of hard work for several months, and cause him to run for one mile without the encumbrance of any weight but his clothes, and judge whether his respiratory organs will not emit abnormal sounds or symptoms of distress.

It is precisely the same with horses.

The first consideration for an examiner is to ascertain by inquiry and his own observation what is the condition of the animal before he rides him or has him ridden.

I have not the shadow of a doubt that the treatment adopted by many examiners for ascertaining the state of the animal's wind is productive of serious mischief, and owners of horses have to thank these zealous individuals for many unsound horses.

It is an act of cruelty to irritate the throats of horses by frequently pinching with violence, or by riding them so violently when they have not been prepared for such exercise of their respiratory organs; and I may state further that such practice should be prohibited.

Some men argue that the examiner should himself ride the horses under test. I am of a different opinion. In the first place he thus takes the *place of a groom;* and secondly, he is better able to learn the state of wind when he is so standing that the horse passes and repasses him. Besides, if it be absolutely necessary for an examiner to ride the horse in order to test his wind, how shall he manage when he is from accident, or other causes, unable to sit on a horse?

It would be said with truth that, under such circumstances, he would be *incompetent* to examine as to soundness.

It is high time that some of the old-fashioned notions were exploded.

CASES OF PLEURO-PNEUMONIA, ILLUSTRATIVE OF THE SLOW PROGRESS OF THE DISEASE.

By Sydney James, M.R.C.V.S., Frome.

An outbreak of pleuro-pneumonia has just occurred in this neighbourhood, which, I think, deserves to be recorded. For confirmation of my opinion I have forwarded to you by this afternoon's train (August 18th), portions of the left lung, with part of the right, "for comparison," taken from a three-year-old steer. I will be brief in my particulars, as, should you require more details, I will forward them.

Early in May of this year a consignment of Scotch oxen, eighteen in number, arrived at Longleat, the residence of the Marquis of Bath, in a very weak and emaciated condition, partly depending, no doubt, upon the rude manner in which they had been reared, together with their long journey, which occupied from ten to twelve days. They came from the north of Scotland to Granton by boat, and the rest of their journey by rail. About a month after their arrival one of the animals, *the first attacked*, was noticed to be ailing, and after ten days' illness it died. The man who cut it up at the kennels tells me that the right lung was extensively diseased.

In about another month, *viz.* on the 14th of July two others sickened, when my attendance was requested; one of these has rallied, the other died on the 22nd of July, and at the *post-mortem* I was much surprised to find lesions akin to those seen in pleuro-pneumonia, and consequently ordered the strictest care to be taken in the management of the others. Upon the 6th of August a fourth animal was attacked. I at once ordered it to be isolated, but it succumbed to the disease. The parts sent you were taken from this animal.

Before making this outbreak public I wish to have my opinion fortified with yours.*

The most striking feature in the case seems to be the long period of incubation and slow progress of the disease, extending over three months. Fortunately upon the arrival of the cattle at Longleat they were subjected to the isolating system, and consequently have not been mixed up with his lordship's other cattle, hence the disease has been limited,

* The portions of the lungs alluded to were sent to Professor Simonds, but he being out of town they were examined by Professor Axe, who fully confirmed Mr. James's opinion of the disease being pleuro-pneumonia.

to the herd of Shetland steers entirely. On the 30th of the past month the whole herd was tested by the thermometer, and four animals were set apart for immediate slaughter. The *post-mortem* in the whole of these revealed the characteristic lesions of pleuro-pneumonia. Should a fresh outbreak occur I will send you particulars at the earliest opportunity.

CRUELTY TO ANIMALS.

By A. E. Macgillivray, Banff, N.B.

There seems just now, not only in this country but also in France, to be a great "hue and cry" as to the prevalence (in professional and non-professional circles) of cruelty to animals.

It is certainly highly creditable to Mr. James Cowie, and speaks well for his feelings, in thus quietly undertaking a crusade against the vivisecting tastes of his professional brethren in France; it seems, however, according to Messrs. Dyer and Adams (see *Veterinarian* for August and September), that he would have found ample scope for his humane operations in our own loved land! These latter gentlemen, it may be noted, confine their remarks and denunciations to non-professional or unqualified practitioners.

Now, I must premise that I don't harbour the slightest intention of taking the part of defending these non-professional operators, far from it, for we have too many of them hereaway in the far north; but I think Messrs. Dyer and Adams would have been nearer their purpose if they had stuck to condemning the non-qualification of these pseudo-professionals and have left alone their *modus operandi*.

Take, for example, the remarks of Messrs. Dyer and Adams on castration; they condemn the clam and hot iron, and so do I; and yet if the truth must be spoken the use of clam and hot iron is not confined to non-professional operators, for I could name several practitioners rejoicing in the legal use of "M.R.C.V.S." who hold by these barbarous instruments!

The caustic clam in castration is, without exception, the most unprofessional, unscientific, and cruel *méthode* imaginable, and yet qualified men *will* resort to it.

It may here be observed that the use of the actual cautery in castration, in so far as regards searing the end of the

vascular cord (from which the testicle has just been excised per scalpel), is not only quite admissible and professionally correct, but also very successful ; but when professional men descend to using the hot iron (instead of knife) to *burn through* not only vascular and non-vascular tissue alike *but also the scrotum*, then I say the sooner the talk about non-professional operators and their doings is stopped the better, and the less inconsistent will be such communications as those of Messrs. Dyer and Adams !

I believe champignon *may* follow after any method of castration ; but I never heard of a case of true champignon taking place, as related by Mr. Dyer, within a *fortnight* after castration. I consider such a thing utterly impossible, and, if thinking so, Mr. Dyer operated in such a case for champignon, I should unquestionably hold him guilty of " cruelty to animals !"

These hard lumps in the scrotum, any time within two months after castration, are neither more nor less than abscesses, and if allowed time may be evacuated as such. How barbarous and cruel, then, to perform such a serious operation as that for champignon on the enveloping shell of a mere abscess !

One thousand to one, on opening the said-to-be champignon good sound laudable pus will be found in greater or less quantity.

Then, again, as to "sewing up the scrotum after castration," I am sorry to say that even this *peculiar* method is not confined to non-professional castrators, for I happen to know several qualified men (legally dubbing themselves " M.R.C.V.S.") who invariably put stitches in both the wounds in the scrotum after castration. Now, I suppose this is what Mr. Adams means by " sewing up the scrotum ;" and like him the reason for this " I cannot possibly divine !"

The equine subjects for castration passing through our hands are as a rule yearlings or under, and in such the wound necessary to allow the testicle to pop out has no earthly need to be of such a size as to require " sewing up." In the end of June last I castrated an eight-year old cart stallion, and a four-year old pony ; and in both these the immense size of the testicles required such large incisions to permit their escape, that I considered it requisite to insert a single stitch in each wound, but took good care to have same cut out in each case within forty-eight hours. Now, I don't suppose any of my professional brethren will account me guilty of malpractice or " cruelty to animals !"

The use of the hot iron in cases of lameness and " lampas"

has been so much and so often discussed by more experienced men, that I need not here occupy your space with any remarks on that topic; suffice it to say that professional men, as well as non-professional, are equally guilty of abusing that powerful remedy (?) the actual cautery, about the benefits derived from which I am sceptical.

Again reiterating the fact that I am far from wishing to champion the doings of non-professional men, I will conclude by saying that, before perpetrating severe animadversions on their actions, we ought to be sure that our own are as nearly as possible immaculate and unassailable!

Pathological Contributions.

CATTLE PLAGUE.

In Russia, cattle plague continues to prevail. The disease exists in the Governments of Bessarabia, Ekaterinoslav, Kherson, Volhynia, and St. Petersburg.

The districts of Taganrog and Berdiansk have lately been reported to be free from cattle plague.

From Austria it is reported that cattle plague became extinct in Nowosielitza on the 18th of August. Four head of cattle have been attacked and died in that place.

According to official information from Austria cattle plague is said to be raging in Bessarabia, and the quarantine prohibitions remain in force until further notice.

Cattle plague still prevails in three villages in the district of Macarsca, in Dalmatia.

From the latest intelligence from Turkey, it appears that cattle plague has again broken out in the district of Galatz, and that the disease still exists in the district of Jassey.

The Danish Government have followed the example of the English authorities, and adopted measures for the prevention of diseases among live stock. A Veterinary Surgeon is to be appointed at each Port of Export, to attend to the disinfection of premises and the inspection of Cattle intended for export, both on their arrival and on their being shipped for passage to Great Britain. Every animal is to be inspected by a Veterinary Surgeon on its arrival at the Port of Departure, and shall be detained, for the purpose of ob-

servation, *for at least twelve hours* before it is shipped, when it shall again be inspected.

PLEURO-PNEUMONIA.

Pleuro-pneumonia was reported to exist in the following counties during the month of August last :—

Bucks, Cambridge, Chester, Cumberland, Derby, Dorset, Durham, Essex, Herts, Huntingdon, Kent, Lancaster, Leicester, Lincoln, Kesteren (Lindsey), Middlesex, Norfolk, Northampton, Northumberland, Notts, Rutland, Somerset, Stafford, Suffolk, Surrey, Warwick, Worcester, York (East Riding, North Riding, and West Riding), the Isle of Ely, the Metropolis, Aberdeen, Edinburgh, Fife, Forfar, Kincardine, Lanark, Linlithgow, Perth, Renfrew, Roxburgh, Selkirk, Stirling, Wigtown.

FOOT-AND-MOUTH DISEASE.

Foot-and-mouth disease existed in the following counties during the month of August last :

Chester, Derby, Dorset, Essex, Hants, Kent, Leicester, Notts, Oxford, Stafford, Surrey, Wilts, Worcester, York (East Riding), ditto (West Riding).

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of August, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of :

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . .	Foot-and-Mouth	...	9	...	...	9	Slaughtered under the instructions of the Privy Council.	322	4700	...	91	5113	Slaughtered under the instructions of the Privy Council.
Antwerp .	„ . .	Sheep-scab . .	...	20	...	...	20	Ditto	...	137	...	...	137	Ditto
Bremen . .	„ . .	Foot-and-Mouth	...	3	...	...	3	Ditto	...	628	...	...	628	Ditto
Hamburg .	„ . .	„	...	2	...	...	2	Ditto	...	1000	...	...	1000	Ditto
Harlingen .	„ . .	„	...	...	...	3	3	Ditto	67	347	...	333	747	Ditto
Rotterdam .	„ . .	„	1	83	...	25	109	Ditto	846	10933	...	2016	13795	Ditto
Tonning . .	„ . .	„	...	4	...	...	4	Ditto	747	2642	...	...	3389	Ditto
Total Diseased Animals .		Foot-and-mouth	1	101	...	28	130	Total Healthy Animals .	1982	20387	...	2440	24809	
		Sheep-scab .	...	20	...	...	20							
		Total . .	1	121	...	28	150							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of August, 1878.

Veterinary Department, Privy Council Office,
September 9th, 1878.

EXTRAORDINARY FATALITY AMONGST CATTLE AT OUGHTIBRIDGE.

During the last few days great excitement has been caused at Oughtibridge by the extraordinary and mysterious death of several cows belonging to Mr. John Mills, farmer, of Oughtibridge Hall. On the 27th ult. four fine animals, of which three were cows and one a bull, were observed to be in an ailing condition. They remained in this state without very much change until Saturday, when one of the cows died. A report of the circumstances were forwarded to Mr. Gill, Superintendent of West Riding Constabulary, and it was mentioned that pleuro-pneumonia was believed to be the cause of death. On the following day Mr. Gill and Mr. Moore, veterinary surgeon, visited the place and carefully examined the rest of the animals, but no symptom of pleuro-pneumonia could be discovered. In the evening the bull died. The sudden death of a second animal further increased the mystery, and every effort was at once made to learn the causes which led to the illness.

On Monday Mr. Cartledge, Mr. Moore, Mr. Fletcher, and Mr. Nelson, veterinary surgeons, made a *post-mortem* examination of the bull. The chest was closely examined, and also the intestines, but there were no appearances to indicate the presence of pleuro-pneumonia; in fact, there were no lesions apparent to account for the suddenness of the death. Last Tuesday a second cow died, and yesterday another succumbed, making three cows and a bull fatally affected.

The inquiries into the causes of the ailment have latterly been incessant. These causes have now been pretty clearly established, but their discovery in no way lessens the extraordinary character of the occurrence. Mr. Mills owned a cur dog, which was in the habit of keeping with the cattle, and this animal has of late shown strange symptoms. On Tuesday it bit a child and a young man, and also another dog. As there appeared to be no doubt that the dog was suffering from rabies, it was considered advisable to have it destroyed. There is every reason to believe that the animals were bitten by the dog, and died from rabies. They refused to drink, nd since affected did nothing but bellow from morning till night. A further fact seems to confirm the belief as to the cause of death. A butcher, named John Haywood, of Oughtibridge, was engaged to cut up the bull for the *post-mortem* purposes. Whilst so employed he unfortunately cut his finger, and soon afterwards the hand and

arm commenced to swell in a most alarming manner, and medical attendance has been called in. Further *port-mortem* examinations of the animals are to be made, with the view of obtaining a correct knowledge of the nature of the disease and the causes of death.—*Sheffield Daily Telegraph.*

HYDROPHOBIA.

John Nunn, a hay carter, has recently died in Ongar Union house, Essex, from hydrophobia. He was bitten *as long ago as May,* 1874, *by the same dog which bit Mr. Brown, veterinary surgeon, of Stanford Rivers,* whose case excited some interest about twelve months ago, and whose death from hydrophobia occurred three years after the bite. —*Sanitary Record.*

Facts and Observations.

Epidemic among Horses.—An outbreak of typhoid fever, or influenza, occurred a few days ago among the horses at the Sheffield Lane Paddocks, near Chesterfield. Pretender, the Derby winner, was attacked, and died after two days' illness. The stables are now free from the disease.—*The Live Stock Journal.*

Thoroughbreds for Japan.—Mr. W. H. Wilson, of Abdallah Park, Kentucky, has received an order to purchase for the Japanese Government four thoroughbred stallions and two thoroughbred fillies.—*The Live Stock Journal.*

Disease among Mules.—A serious disease has broken out among the mules and cattle in some parts of Greece. A swelling shows itself, more generally on the chest, and frequently in twelve or fourteen hours the animal dies, or it may linger two days. On opening the animal no cause can be found. In a village in Eubœa all the mules have died.—*The Live Stock Journal.*

Agricultural Returns of Great Britain.—The live stock in Great Britain on June 4th was :—5,738,476 cattle ; 28,397,274 sheep ; 2,483,437 pigs. The cattle are 40,543 in number, or 0·7 per cent. more than last year ; but 105,665 in number, or fewer than they were on June 25th, 1876. Sheep show a larger increase—236,110 over 1877, and 214,323, over 1876; while pigs are 15,291, or 0·6 per cent. fewer than

last year, but 198,817, or ·3 per cent. more than they numbered two years ago.—*The Live Stock Journal.*

Number of Sheep in Europe.—In connection with the recent show of live stock at the Paris Exhibition, statistics have been published estimating the number of sheep in Europe in 1876 at 194,026,236 head. Of these 46,432,000 were in Russia, 29,495,900 in England, 25,035,114 in France, 22,468,969 in Spain, 22,295,682 in Germany, 6,884,049 in Italy, 898,715 in Holland, and 586,097 in Belgium.

Inoculation of Cattle. — The Minister of Agriculture writes from Berlin to the President of the Central Agricultural Society of Saxony, stating that he is continuing his researches and experiments on the value of inoculation in pleuro-pneumonia, but that he is not as yet sufficiently convinced of its efficacy as a preventive measure to contemplate the introduction of any law rendering it compulsory.

Milk as a Vehicle for Quinine.—"Milk is an elegant and convenient solvent for quinine, and it disguises to a great extent its bitterness. If one grain of sulphate of quinine be dissolved in an ounce of milk, we shall find that the bitterness of the draught is hardly perceptible; with two grains there is rather more bitterness, but it is not all marked. A dose of five grains may be taken iu two ounces of milk without any unpleasant bitter taste; and if the same quantity be put into a tumbler full of milk, the bitterness is all but lost" (R. L. Batterbury, M.B.).—*British Medical Journal.*

Milk Adulteration.—The adulteration of milk seems to play a very important part in manufacturing chemistry just now, for in the journal of the Chemical Society it is stated that "it is possible to adulterate milk" with 35 per cent. of glycerine water, without the possibility of detection by the usual modes of examination. It is true, we are informed of a method by which this glycerine may be detected; but milkmen will doubtless feel grateful for the hint, nevertheless.

A Contemporary says that a capital plan of protecting horses and cattle from the tormenting attacks of flies in hot weather is to wash their coats in the morning with a decoction of walnut leaves, the peculiar smell of which effectually keeps the would-be marauders at a distance. The decoction is said to have the further power of destroying any eggs that may have been already deposited in the skin.—*The Chemist and Druggist.*

THE VETERINARIAN, OCTOBER 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE CONTAGIOUS DISEASES (ANIMALS) ACT OF 1878, IN ITS APPLICATION TO IRELAND.

SECTION 75 of the Act which has just passed states that "Part 4 of the Act applies to Ireland, and in subsection (2) it is provided that Part 2 of the Act, that is, the whole of that part of the Act which applies to England, shall extend to Ireland, subject to Part 4, which is to have effect in substitution of Part 2 when so expressed or implied, otherwise it will have effect in addition to Part 2."

The above-stated provision is the result of the discussion which took place when the Bill was in Committee. As the measure left the House of Lords, Part 2 would only have had effect in those parts of Ireland to which the Lord Lieutenant by order directed it to be applied; but it was contended that under this provision the Act would not really extend to Ireland at all, and therefore the permissive clause was struck out, and when the Act comes into operation on the 1st of October, Ireland will be under the law which will be in force in England.

Reference to the part of the Act which specially applies to Ireland will show that the Lord Lieutenant has certain powers which are necessary to meet the peculiar circumstances in Ireland, where the Boards of Guardians are the only local authorities which can be charged with the execution of the measure, and where the number of veterinary surgeons is so limited that it was impossible to insist on the appointment of at least one veterinary inspector by each local authority as in England. The special difficulties of the Irish executive are met by Section 81 of the Act, which provides, first, that local authorities shall not be bound to appoint veterinary inspectors, and further, that the powers and duties of a veterinary inspector shall in Ireland be vested

in, and discharged by, an inspector; but where an inspector "has the qualification of a veterinary inspector, he may be styled a veterinary inspector." Secondly, the Lord Lieutenant and Privy Council may, by Order in Council, unite two or more poor law unions into a district, "for the purposes of inspection, and for authorising or directing the local authorities of these unions to appoint and keep appointed a veterinary inspector for the united district; or the Lord Lieutenant may, if he thinks fit, appoint a veterinary inspector for the united district on such terms and conditions, with reference to contributions by the several unions towards the travelling expenses and allowances of the inspector, as the Lord Lieutenant thinks fit." Thirdly, it is provided that "an inspector appointed by the Lord Lieutenant shall have throughout Ireland, or that part thereof for which he is appointed, all the powers by Part 2 conferred on a Veterinary Inspector of the Privy Council."

The fair presumption is that the Lord Lieutenant and the Privy Council will exercise the powers which the Act confers on them; but if they should not make the Orders in Council referred to then, as we read the Act, it follows that every poor law union will be required to appoint an inspector, and to carry into force the various provisions of Part 2 of the Act, just as the local authorities in England will be required to do.

That very much of the success of the measure will depend on the action taken by the Irish executive will not be questioned; the fact of Ireland sending us every year more animals than we receive from the whole of the other exporting countries combined is sufficient evidence, if it were needed, to prove the importance of establishing sanitary laws in Ireland for the regulation of the export cattle trade; and we are glad to be able to refer, as an indication of the intentions of the Irish Government in the matter, to the recent appointment, by the Lord Lieutenant, of a Commission consisting of the Under Secretary, the Assistant Under Secretary, the Treasurer, Remembrancer, and Paymaster-General, and the Head of the English Veterinary Department, to inquire into the working of the Veterinary Depart-

ment in Ireland. It was repeatedly alleged by witnesses before the Parliamentary Committee which sat in 1877 on the subject of the Contagious Diseases of Animals, that the Veterinary Department in Ireland required to be strengthened, and we may hope that the result of the inquiry which has been conducted will be the establishment of an efficient system of sanitary police in Ireland as well as in Great Britain.

Extracts from British and Foreign Journals.

WHY SOME PLANTS EAT MEAT.

A BEAUTIFUL series of experiments have been worked out by Dr. Francis Darwin in illustration of the views of his father. We would particularly draw attention to the simplicity of the mode adopted, proving as it does that a love and habit of observation are the requisites for original research. Darwin the elder believes that the power of catching and digesting insects is advantageous to the plants, and plays an important part in their economy. The phenomena which have been observed by many and philosophically considered by a few are not mere accidents; still less disturbances in plant life. "If," says the Doctor, "this explanation of the facts be not accepted, we find ourselves in the presence of a number of elaborate, but quite meaningless, structures, such as the trap of a Dinœa or Utricularia; delicate powers of discriminating between different kinds of stimuli, as in Drosera; and properties of forming a peptic secretion, such as that in Pinguicula, Dinœa, and Drosera." There is nothing created in nature which is not specially adapted for some distinct purpose, and to think otherwise would be to interpret wrongly the evidence of design. Still, though many observers have acceded to the Darwinian theories on this matter, as no direct proof of advantage accruing to the plant from the capture and digestion of insects has been given, a provisional acceptance of the theory may fairly be followed by a request that such direct proof be furnished. We can picture to ourselves nothing more delightful than the spirit in which the son sets about the task of completing the unfinished experiments of his father, bound together as both are by the ties of natural piety.

Darwin (*père*) originally devised a mode of proof. Plants

of Drosera were cultivated in plates, each of which was divided into halves by a strip of zinc. The plants on one side of the partition were to have been fed, the other half being kept without food, and their growth was to have been compared.

The term starved was applied to the unfed plants, for the sake of clearness. In this first essay both the fed and the starved plants died, either poisoned by the zinc or injured in some other way, and hence the experiment failed. A second attempt, made by the son, was more successful, wooden instead of metal partitions having been employed.

The recent literature on the subject shows that the want of some such experiments have been widely felt. E. Norren, of Liége, remarks that it ought to be experimentally established that the absorption, which is undoubted, really contributes to the nourishment of the plant. Cramer, of Zurich, cites many experienced naturalists who are of opinion that the plants in question thrive as well when starved as when supplied with insects, and therefore the question ought to be experimentally decided.

One author (Munk) remarks that the catching and driving away of insects may be of service; but in the digestion he can only see an injury, and this idea is expressed by others, all of them careful observers.

Casimir de Candolle made a comparative experiment on four Dinœa plants, two of which were fed and two starved. Carefully watched for six weeks, no difference was noticed between the two sets: the conclusion drawn was that animal food was not necessary to the plants, though he was careful to point out that the number operated on was too few to form a just conclusion therefrom.

Ch. Cavallier addressed the question to a number of distinguished observers as to their opinion on the subject of vegetable digestion. The replies were chiefly opposed to the theory, basing their rejection on the want of positive and direct confirmation. It was needful then to furnish, if possible, proof that digestion did take place, and that also it was beneficial; for the problem had been stated rather than proved, and digestion was assumed to occur upon insufficient data.

The Drosera plants were obtained from a neighbouring common, and were planted in moss in six ordinary soup plates: these were placed in two rows on a wood tray having a raised border all round, and were covered by a wooden frame one foot in height, over which was stretched a gauze netting. The frame lifted off and on like a bell-glass and fitted close within the rim of the tray. The whole apparatus stood near the light in a grape house, where no artificial heat was applied,

and where the shade appeared to suit the plants, as they throve wonderfully. The plants and moss were kept damp, and the water was constantly renewed. Each plate was divided into two halves, separated from each other by a thin piece of wood hardly reaching above the surface of the moss. That half of each plate which appeared least flourishing was selected to be the "fed" side, the opposite being labelled "starved." Every precaution was taken to conduct the experiment with accuracy: the plants were arranged with the partition line of each pointing to the light, so that neither side received more light than the other, and the arrangement of the plates was systematically varied so as to prevent any one profiting from light or air more than its fellows. The food was roast meat cut into slices across the grain, the fibre teazed, and so comminuted that fifteen weighed when damp only two centigrams; each piece was $\frac{1}{15}$ grain. The food was placed on every leaf which had secretion on the glands. Larger portions were not digested, but covered with mould instead. The first difference noticed between the fed and the starved halves of the plates was that the fed was clearly greener that the other; the increase in the amount of chlorophyll thus indicated agreed with the result of the final comparison of dry weights, which proved that a much greater quantity of cellulose was manufactured by the fed ones than by the starved plants. Increase of chlorophyll is associated with increased assimilation of carbonic acid, and this permits the production of a large quantity of cellulose. The body of the chlorophyll grain being protoplasmic, it is obvious that an increased supply of nitrogen will favour the multiplication of chlorophyll, and increase the starch-producing power of the plant. The absorption of nitrogenous food produced a most decided effect on the number of flower-stems, the fed plants having 173, and the starved plants 116 only. The number of stems which bore at least one flower was 34 on the fed side, as compared with 19 on the starved.

Healthiness of the leaves was determined by the presence of secretion on the glands; the fed plants exhibited 256 healthy leaves, the starved 187. The diameter of 45 leaves selected at random from both sides was measured on the millimètre scale. Forty-five fed leaves gave a total of 328 mm., while 45 starved leaves gave a total of 301 mm.

The capsules being now mostly ripe, there was the danger of loss of seeds by the bursting of the capsules, consequently the flower-stems from all six plates were cut. For the sake of brevity a running comment on the tables furnished is omitted, and Dr. Darwin's results are above recorded. The

minimum number of seeds among the fed capsules was 52, the maximum 168. Amongst the starved capsules the minimum number was 44, the maximum 129.

In whatever way the fed and starved plants were investigated the advantage was on the side of the former. Moreover, though in number and height the fed plants were superior, yet the weights of the stems, and the weights of the seeds on the fed side, exceeded the corresponding weights on the starved side in a still higher ratio. Increased weight is a better proof than an increase in numbers or size of increased power of assimilation.

The striking difference found to exist between the fed and the starved plants was that which related to reproduction of the species; from the results given here in abstract it would seem that the great advantage accuring to carnivorous plants from a supply of nitrogenous food to the leaves in the power of producing a vastly superior yield of seeds.

Doctor Darwin ventures to think that the above experiments prove beyond question that the supply of meat to Drosera is of signal advantage to the plants, and that there can be no doubt that other insectivorous plants profit in an analogous manner from the capture of insects in a state of nature.

Very remarkable indeed was a last experiment, when three plates of both fed and starved plants, of which the flower-stalks only were gathered, were allowed to rest during the winter, in order to test the relative amount of reserve material laid up by both.

The plants were forced in the hot-house, and were placed under identical conditions, both remaining without food. Taking 100 as the standard number for the starved plants, the total weight of the fed plants was 251·6, and the average weight per plant, compared with the standard 100 for the starved plants, was 213 for the fed. "It is a striking fact," says the Doctor, "that in spite of the relatively enormous quantity of flower-stalk and seed produced in the summer by the fed plants, they were still able to lay by a far greater store of reserve material than their starved competitors."

Essentially similar experiments were described before the Phys. Med. Society of Erlangen by German investigators. The food supply consisted of Aphides, instead of meat, and the results demonstrate in the clearest manner the numerous and striking advantages accruing to the fed plants.—*The Chemist and Druggist.*

BACTERIA AS PARASITES IN SPLENIC DISEASES.

M. H. Toussaint has communicated fresh remarks on this subject to the French Academy, his object being to show that those who have attributed the disease to a virus, and not to the bacteria, are in error. Referring to a previous paper, he states that a rabbit dying after inoculation with blood containing the bacteria, dies in consequence of the obliteration of the capillaries of essential organs such as lungs and brain. Most of the flexuous capillaries of the economy are filled with bacteria at the moment of death. This effect is most readily observed in the choroid and retina of albino rabbits. He claims to have demonstrated that when fresh bacteria blood is received in tubes and preserved from contact with air and from putrefaction it loses its contagious properties in six or eight days, or sooner if kept at a tempeperature of 38° to 40° C. A virus does not behave in this way. Such a method would be adopted to preserve it. Filtration of bacteria blood, fresh and defibrinized, through a filter composed of eight sheets of paper suffices to deprive it of its contagious elements. This filter allows the granulations, and even some white corpuscles to pass, but it retains all the bacteria. Such a filtration allows a considerable quantity of virus elements to pass, but completely deprives bacteria blood of its contagious properties. The time elapsing between bacterium inoculation and the death of an animal may be regulated by the quantity injected and the pretended incubation period suppressed. In one rabbit 1½ cubic centimètres of the affected blood were injected, containing some 1500 millions of bacteria; in another 75 millions; and in a third 1500, the blood being diluted with water. The first died in seven hours, the second in twelve or thirteen, and the third in thirty-six hours. He describes many other experiments, all confirming the belief that the death is produced by the multiplication of the organisms and their obstructing the capillaries.—*Journal of the Royal Microscopical Society.*

OFFICIAL REPORT ON THE TRANSIT OF ANIMALS FROM IRELAND TO PORTS IN GREAT BRITAIN.

To the Lords of Her Majesty's Most Honorable Privy Council.

February 14th, 1878.

My Lords—In the Report of the Select Committee of the House of Commons on Cattle Plague and Importation of Live Stock which was published last year allusion is made to the subject of the transit of animals from Ireland to this country,

and in paragraph 37 the Committee recommended "that a searching inquiry should be made into the subject of the "transit of cattle from Ireland to the ports of Great Britain; "into the provisions made for their reception at the ports of "departure and of arrival, and into their treatment during the voyage."

In consequence of this recommendation of the Committee the Lord President, in December last, instructed me to institute an inquiry in reference to the treatment of animals during the voyage from Ireland to Great Britain; and as to the provisions made for their reception at the ports of arrival. His Grace at the same time gave instructions that the Veterinary Department in Ireland should be requested to conduct a similar inquiry as to the provisions made for the reception of cattle at the ports of departure, and the arrangements for their inspection prior to shipment.

Two of the travelling Inspectors, Mr. Courtney and Captain Tennant, whose reports are in the Appendix, carried into effect my directions as to the nature and extent of the inquiry in a very careful and satisfactory manner, and I have the honour to submit to your Lordships the following report, which embodies the results of their investigations.

Mr. Courtney confined his inquiries to ports south of Liverpool, and Captain Tennant proceeded to the northern ports; by this arrangement they were enabled to visit all the ports and places at which Irish animals are regularly landed, viz., Ardrossan, Barrow-in-Furness, Bristol, Fleetwood, Glasgow, Greenock, Holyhead, Liverpool, Milford, Morecambe, Newport, Plymouth, Silloth, Southampton; Stranraer and Whitehaven.

Irish animals are occasionally landed at the ports of Cardiff, Gloucester, Harrington, Islay, London, Maryport, Portsmouth, Workington, and Carradale, Kyntire. There is no regulation to prevent the landing of Irish animals at any port in Great Britain, but the places named include all those at which any cargoes are known to have been landed in 1877.

It appears that only one case of overcrowding was witnessed by the Inspectors, but the inquiry was made at a time of year when the cattle trade between the two countries is slack, and from the evidence which was obtained there is no doubt that overcrowding is common in the busy season, and that animals suffer much in consequence. For this state of things it is not easy to devise a legislative remedy which shall be of universal application. Cattle differ so much in size that a restriction as to number in a given space would not be of the slightest use. If the calculation were made for full-sized animals, the number

of small stores allowed would be considerably dimished, and a proportionate increase in the cost of transit would be the result.

Fat cattle are tied up on board, but stores are generally turned loose into the pens, and much mischief arises in consequence. The Inspectors appear to have come to the conclusion that Irish animals are exceedingly pugnacious, and commonly, when allowed full liberty, fight during the whole voyage.

Generally, the vessels engaged in the Irish trade are properly fitted, but in the case of some of the screw vessels it was observed that, owing to their deficient width of beam, cattle are not allowed sufficient room to stand comfortably ; and in such cases, when the vessel rolls, it is sometimes necessary to untie the animals in order that they may stand fore and aft.

Ventilation is generally provided by means of separate inlet and outlet openings, in accordance with Article 44 of the Order of 1875 ; but when vessels are lying off the quays, or waiting for a tide, animals often suffer from insufficient air.

To a great extent the comfort of animals during the voyage appears to depend on their condition at the time of embarkation. If they have been rested at the place of shipment some hours, fed and watered, and put on board quietly, they travel well. Animals which arrive just in time to be shipped do not recover from the effects of their journey, and suffer still further from the voyage across.

Food is supplied to animals on board when the voyage exceeds twenty-four hours, and the Inspectors have seen them feed well during transit, although they sometimes refuse food; it does not appear that water is given, in fact there is a very general prejudice against giving animals water on a journey, as it often induces scouring (diarrhœa).

At the landing places in this country water is provided, but there are no general arrangements for lairage ; and animals are often landed in the dark and at unexpected hours, and driven away at once to the railways. The object usually is to get them into the trucks as quickly as possible for the purpose of sending them to their destination.

Cleansing and disinfection of vessels is not done, at least on this side, in a satisfactory way. Indeed, in many instances, the ships leave at once after landing their cargoes, and it is doubtful if there exists any power to detain them. In any case great inconvenience would arise if such a provision were enforced.

Altogether the results of the recent inquiry justify the conclusion that the remedies for the defects which have been observed should be applied at the ports of shipment.

First, in order to simplify the transit regulations Ireland should adopt the most stringent measures to extirpate foot-and-mouth disease and pleuro-pneumonia.

Next, proper lairs should be provided at the various ports for the inspection, rest, and refreshment, of animals previous to shipment, and means should be devised for the prevention of the chief evil, that of overcrowding. The presence of a responsible person on the wharf would be sufficient to prevent the shipment of more animals that could be conveniently provided for. A looker-on could decide this point without difficulty, although it may not be possible to frame a clause in an Order of Council which shall accurately define in what overcrowding consists.

It is undoubtedly true that paddle steamers carry animals much more comfortably than screw vessels, and it is also certain that the greatest amount of suffering is endured by animals which are carried below the water line, but it would hardly be reasonable to insist that only the deck and 'tween deck should be used for the reception of animals, however desirable the arrangement might be.

No observations are made in the reports of Mr. Courtney and Captain Tennant on the subject of the transit of animals in Ireland and the provisions made for their reception at the ports of departure, because that part of the inquiry was undertaken by the Irish Veterinary Department, but I may be permitted to suggest that, if proper arrangements be made in Ireland to ensure the sanitary condition of animals prior to shipment, and for a supply of food and water before or during the voyage, the landing in this country and subsequent inland transit need not be subject to that frequent interruption which has given rise to so much complaint on the part of Irish stock owners, without, so far as I can judge, having served any useful end.

Veterinary Department, I have the honour to be,
Privy Council Office, 1878. My Lords,
Your Lordship's obedient servant,
G. T. Brown.

Reports on Transit of Animals from Ireland to Ports in Great Britain, by Mr. Courtney and Captain Tennant.

Mr. Courtney's Report.

Sir—In compliance with your instruction, I have the honour to submit the following Report, being the result of inquiries made by me, acting in conjunction with Captain Tennant, into the subject of the transit of animals from Ireland to ports in Great Britain, the provisions made for

their reception at the ports of arrival, and their treatment during the passage.

My inquiries have been confined to Liverpool and ports south of that place.

I have made several passages from Ireland to England in vessels carrying animals, but owing to the time of year, December and January, trade was slack and comparatively few animals were being carried, and in only one case have I seen overcrowding, which occured on board the steam vessel "Cavan" from Dublin to Liverpool. The cattle conveyed on this occasion were packed so tightly that when one of them happened to fall down it was only with great difficulty raised again. The animals appeared to suffer much, and perspired profusely during the passage.

Although I have actually witnessed only one instance of overcrowding, I have received information from drovers, agents, captains of vessels, and others, which leaves no doubt in my mind that overcrowding occurs to a great extent in the months of June, July, and August, during which period store cattle are brought over in great numbers. During these months, when following my ordinary work of inspection, I have often observed cattle landed at the different ports in a most exhausted condition.

The vessels engaged in the Irish trade are, with few exceptions, well adapted for the purpose, and I have observed no cases where the fittings have not been in accordance with the Order of Council.

In one passage, from Belfast to Dublin, on board the steam ship "Magnetic," I observed cattle being carried on deck in pens to small for their comfort; this, however, was in consequence of the size of the vessel not allowing a sufficient width.

When we got out to sea the vessel, a screw, rolled considerably, and the animals, not having room to sway with the motion, were much knocked about. The men in charge then untied them and allowed them to stand fore and aft. This change of position afforded them great comfort. They had previously been tied to the sides. In the event of this vessel having had a full cargo, no change in the position of the animals could have been made, and they must have suffered greatly.

Experience shows that divisions on board vessels should neither be too small nor too large. I think the width of the divisions should not be less than seven feet.

The majority of steamers trading to Liverpool, Holyhead, and Bristol are paddle vessels, and there can be no doubt,

that for the comfort of the animals paddle boats are much superior to screws. I have observed that animals landed from the former vessels generally appear fresher and in better condition than those conveyed in screw vessels.

The duration of the longest passage seldom exceeds thirty hours, and to most ports it does not extend to half that time.

It is the practice to feed but not to water animals when the passage exceeds twenty-four hours. I have noticed the animals refuse food on board, and in some cases for some time after they were landed.

The regular cattle trading vessels are provided with brows or gangways, by which animals are driven into the 'tween decks and holds. I saw no instance of slinging cattle in or out of a vessel.

With reference to the loading and unloading of animals, I did not observe any cases of unnecessary cruelty; but animals, particularly swine, often require strong persuasion to get them into the vessel, the more so when darkness prevails.

Animals are generally insured by the company carring them, and caretakers are always on board, and appear to give every attention to the comfort of the animals so far as the circumstances permit.

The ventilation of vessels which came under my notice was in accordance with the regulations contained in the Animals Order of 1875.

I noticed that it was not during the actual passage that the animals appeared to suffer most from their confinement in in the holds and 'tween decks, but when the vessel was stationary, during the fogs, waiting for tides, or at the quay side. The temperature on these occasions always becomes most oppressive, and the animals suffer accordingly.

Cattle are often embarked in a heated and excited condition; when this happens the atmosphere of the 'tween decks and holds, becomes charged with steam, and is almost unbearable, and the animals are generally landed in an exhausted condition.

As a contrast, I have seen an equal number occupying the same space, but which had been dtained at one of the depôts for some hours; these came on board cool and quiet, and were landed looking fresh and comfortable.

It appears to me to be highly necessary that before animals are shipped they should be detained some hours in the neighbourhood of the place of embarkation, in order to obtain food and water, and to become cool before commencing their journey, and I do not consider that there would be any serious difficulty in this arrangement being carried out.

Full-grown and fat cattle are always tied up during the passage, but yearlings and other stores seldom are, except in vessels belonging to the London and North-Western Railway Company trading between Ireland and Holyhead. On board these steamers I am informed it is always done, and no difficulty exists in securing the beasts. I am of opinion that if this practice were generally adopted overcrowding would be to a great extent checked.

Animals often lie down when not crowded, and appear to travel better in that position: but when crowded, when once down, they cannot get up again without assistance, and run great risk of suffocation.

Many vessels during the winter months discharge their cargo of live stock at English ports in the dark, and the animals are immediately sent away by rail to different parts of the country. Under these circumstances the veterinary inspector can only make a very cursory examination by lamplight.

Vessels also arrive at unexpected hours, and often no inspection of the animals is made.

The accommodation at the landing places is generally satisfactory, the water supply is sufficient at most ports, and the railway stations near the landing places are well paved, and covered sheds exist both at Holyhead and Milford, which are constantly occupied by Irish animals.

The cleansing and disinfection of vessels trading between Ireland and Liverpool does not appear to be satisfactory. Vessels often arrive at the Prince's landing stage, discharge their cargo, and return on the same tide to Ireland. Under these circumstances it is impossible to ascertain on the English side whether the Order of Council as to cleansing and disinfection is properly carried out.

On the whole I consider that there is not much to complain of in the accommodation provided on board the vessels engaged in the Irish trade, but the gain on this score is negatived by overcrowding, which seems to be the great blot on the system, but I think that with proper supervision at the ports of embarkation this bad practice could be easily stopped.

I have &c.

Professor Brown,
&c. &c.,
Veterinary Department,
Privy Council Office.

REGINALD COURTNEY,
Travelling Inspector.

Captain Tennant's Report.

February 15th, 1878.

SIR,—In compliance with your instructions I have the honour

to submit the following Report, being the result of the inquiries made by me on the treatment of animals in transit from Ireland to ports in Great Britain, and the provisions made for their reception at the ports of arrival.

My inquiries have, for the most part, been confined to the more northerly ports, Mr. Courtney having been engaged in a similar inquiry in the south.

With a view of obtaining information as to the treatmeut of animals while on board ship, I made ten passages from Ireland to Great Britain in different lines of ships engaged in the live-stock trade.

Owing, however, to the passages having been made at a time when live stock cargoes are generally small, I had but few opportunities of judging whether the ships are as overcrowded as has frequently been stated. But I have been informed by many dealers, drovers, and others, that during the summer months, when the cattle trade is active, almost all the ships plying from Ireland to Great Britain are frequently very much overcrowded.

I am disposed to think, both from my own observation and from the inquiries I have made, that cases of wanton cruelty on the part of persons in charge of animals are of very rare occurrence, and indeed it would appear to be directly against their own interest, as their employers hold them responsible for the condition in which the animals arrive. No doubt in many instances, more especially in bad weather, the voyage entails considerable suffering. The animals, being strangers to each other, often fight unceasingly, and never get a moment's rest during the whole voyage.

In only one instance have I seen any attempt made to feed animals on board a ship, which was on my passage from Cork to Bristol. On that occasion some of the animals seemed to feed well, but it appears to be the general opinion amongst the dealers that animals will not feed on board, except under very exceptional conditions of weather and space. Even when detained at the port of landing for a few hours before being forwarded by railway I have on several occasions observed that many of the animals will not feed.

At very few of the ports of landing does there appear to be any regular system adopted for feeding the animals before forwarding them by railway to their destination. They are usually sent by the first train, and it is only when they are unavoidably delayed for some hours that they are fed. There appears to be a prejudice at some places against watering the animals at the port of landing, as it is said to produce "scours."

At some of the ports no covered lairs exist, and consequently, when landed, the animals have sometimes to remain for hours exposed to the weather; perhaps after having been taken from a very hot hold.

In the course of my inspections I visited each of the ports in Great Britain (situated not further south than Holyhead) at which animals from Ireland are commonly landed. After having made inquiry along the coast, I have only at one place ascertained that animals have been landed during the past year, such place not having been known to be commonly used for landing. This was at Carradale Kyntire, 467 sheep having been landed there from Portrush on the 6th April last.

I have, &c.

T. TENNANT,
Travelling Inspector.

QUEENSLAND, 1878.—REPORT OF THE CHIEF INSPECTOR OF STOCK FOR THE YEAR 1877.

(Presented to both Houses of Parliament by Command.)

To the Honorable the Colonial Secretary.

SIR,—I have the honour to present the following Report on the state of the stock in the colony for the year ended 31st December, 1877.

The number of sheep in the colony at 31st December last, on which assessment has been paid, together with the increase and decrease in the various pastoral districts, are given in the following tables, viz.:

Pastoral Districts.	Number in 1877.	Number in 1876.	Increase.	Decrease.
Burke	33,940	14,000	19,940	...
Burnett	181,155	293,763	..	112,608
Darling Downs	1,770,998	2,219,550	...	448,552
Gregory North	87,142	52,351	34,791	...
Gregory South	19,255	15,460	3,795	...
Kennedy	113,161	268,955	...	155,794
Leichhardt	1,174,116	1,581,574	...	407,458
Maranoa	780,742	717,229	63,513	...
Mitchell	1,002,741	752,912	249,829	...
Moreton	32,198	68,519	...	36,321
Port Curtis	27,732	41,173	...	13,441
Warrego	744,384	645,678	98,706	...
Wide Bay	9,000	16,115	...	7,115
	5,976,564	6,687,279	470,574	1,181,289
Deduct Increase				470,574
Total Decrease				710,715

If these figures are reliable—and, from the fact that the

returns made to the Commissioners agree with the numbers on which assessment was paid at the Treasury, it would appear they are—the losses from drought are much heavier than was generally anticipated.

Although the actual decrease is as shown above, the real decrease cannot be estimated without taking into consideration the loss occasioned by the absence of natural increase of lambs.

In a favorable season the increase should have been somewhat as follows:

Number of sheep at 31st December, 1876, as above . .		6,687,279
Increase by lambs on one third of these, at 60 per cent.	1,337,455	
Excess of imports over exports, as below . . .	50,029	
		1,387,484
		8,074,763
Deduct for home consumption for the year, at 2 sheep per head of population		380,000
		7,694,763
Number returned at 31st December last, as above . . .		5,976,564
Leaving a deficit of		1,718,199

So that from drought or other causes there has been a loss to the colony during the year of nearly one and three quarter million of sheep.

As will be seen, the decrease is largest in those districts where the drought was more severe, and the marsupials most numerous.

Improvement of Flocks.

The following stud sheep were introduced by sea during the year:

	Merinos.		Lincolns.		
	Rams.	Ewes.	Rams.	Ewes.	Total.
New South Wales .	1	...	2	...	3
Victoria . . .	459	...	...	2	461
Tasmania . . .	248	134	...	...	382
	708	134	2	2	846

In addition to these, a considerable number of superior stud sheep were introduced borderwise into the Western districts during the year.

The number of sheep brought over the border during the year was 381,254, and the number sent across the border to other colonies 332,071, giving an excess of imported over exported sheep, by land and sea, of 50,029.

Considerable alarm was created in September last in consequence of the reported outbreak of a new disease in sheep in

the Taroom District, from which large numbers died. The Board of Enquiry took the matter up, and despatched Dr. Bancroft, one of its members, to inquire into the nature and cause of the disease. Dr. Bancroft's report is already before the public.

From the fact that the sheep rapidly recovered from change of pasturage, and judging from the symptoms described, the cause of mortality would appear to have been anæmia (want of blood), occasioned by the want of nutrition in the dried-up pasturage, and (according to the Doctor's report) aggravated by the presence of entozoa.

The subject of travelling sheep, particularly the immense numbers from New South Wales travelling for grass during the year, assumed such serious proportions that a general desire has been expressed, by those on whose runs serious inroads have thus been made, for special legislation to regulate the traffic.

The subject is a difficult one, and the only practicable mode of dealing with it would appear to be by imposing a grass charge on all sheep not legitimately travelling to, or returning from, market, or for the purpose of stocking runs.

The amount standing to the credit of the Sheep Fund at 31st December last was £3842 3s.

Cattle.

During the year, 357 stud cattle were imported by sea, of the declared value of £15,457, as under :

	Bulls.		Cows.	
	Number.	Value.	Number.	Value.
From New South Wales	276	£12,450	69	£2,707
From Victoria	12	300	...	...
	288	£12,750	69	£2,707

A large number of pure-bred cattle were introduced borderwise into the Western districts, many of them from some of the best pure herds in Victoria.

Pleuro-pneumonia would appear to have been less prevalent during the past year than for several years past. From none of the coast or border districts have I received any reports of its existence.

I have, &c.,

P. R. Gordon,

Chief Inspector of Stock.

Office of Chief Inspector of Stock,
Brisbane, 9th May, 1878.

TÆNICIDES.

Several short notes on this subject have recently appeared in medical and pharmaceutical periodicals.

Dr. Leaed says he cured a case, in which kamala, male fern, and kusso had failed, by the following remedy:—Sp. Terebinth. ʒiij; Tinct. Hyoscyami, ʒss; Mucil. Acaciæ, ʒss; Aq. Chlorof. ad ℥ij. The draught was taken on an empty stomach, the bowels were opened soon after, and a worm with its head was expelled. It proved to be a *Tænia medio-cannellata*. He says, "It is necessary to be cautious in giving turpentine. All inconveniences, however, are guarded against by the administration of a brisk purge if the turpentine does not speedily act on the bowels."

Professor Mosler would disgust the parasite with his home, and then cook him on his way out. The diet is first regulated, food being given which is supposed to be distasteful to the tapeworm—bilberry tea, herrings, sour cucumbers, salted meats. The intestine having been, as far as possible, emptied by laxatives, a dose of the extract of pomegranate bark is administered, prepared from the fresh bark, and then a large quantity of warm water is injected into the rectum. The theory is that the worm, previously brought down into the colon, is prevented by the water from attaching itself to the wall, and is brought away by the liquid on its escape. It is asserted that in every case in which this treatment was adopted the head of the worm was removed.

M. Bouchut, of the Children's Hospital, Paris, digests them *in situ*. He has found that not only ascarides, but fragments of tænia, when placed in a weak alcoholic solution containing 1-35th of amylaceous pepsine, are digested by the fluid in the course of twelve hours. On submitting the conclusion drawn from his experiments to the test of practice at the Enfans Malades, M. Bouchut found that the solution of pepsine was eminently successful. The *Medical Examiner* says:—"If his experience be confirmed a valuable addition will be made to adult as well as to infantile therapeutics."

Dr. D. J. Macgowan, of Shanghai, tells us that a wine made of a certain Chinese serpent is esteemed by the natives as an anthelmintic.

Dr. Bröking, of San Remo, tells us that the people of Northern Italy use the seeds of the pumpkin (*Cucurbita maxima*), both as an article of food and a remedy for tapeworm. Their purgative action is but slight, and produce neither nausea nor pain in the abdomen, but they appear to destroy the

worm. If the patient has fairly good teeth, he may be directed to eat an ounce and a half of the seeds, or the same quantity may be beaten up into a paste with sugar and water. The seeds should be taken early in the morning, the patient having fasted since the noon of the previous day, and should be followed by a dose of castor oil at an interval of three or four hours. It is asserted that the head and cervical segments of the worm seldom fail to appear in the stools. It is worthy of notice that seeds of pumpkins grown in cooler latitudes do not possess vermicide properties; some seeds obtained in Paris and in Germany did not produce the desired effect. There is, however, no difficulty in obtaining the seeds from San Remo, for Signor Vacchieri, of the Farmacia Internazionale, has been good enough to promise to forward a supply gratis to any hospital or dispensary. The seeds have a sweet and pleasant taste, and when beaten up with a little sugar, are freely taken by children.

In a recent German publication we are told that black oxide of copper is the surest and best cure for tapeworms, It is given in pills made according to the following formula:—

Cupri oxydati nigri	. .	6 grammes.
Calcariæ carbonicæ	. .	2 „
Boli albi lævigatæ	. .	12 „
Glycerin	. . . .	10 „

Make 120 pills. Take 2 four times daily.

It is said to have this disadvantage, that the patient is denied the pleasure of exhibiting his tormentor.

It is suggested that Pelletierin will be found a powerful remedy for this trouble.—*The Chemist and Druggist.*

ANIMAL VACCINATION.

The Sanitary Record, in its Review of the report by Henry A. Martin, of Massachusetts, on "Animal Vaccination," says that the report is so full of information that it does not admit of ready condensation. We feel obliged, therefore, to content ourselves with noticing the main features of the paper, feeling sure that such of our readers as take more than a passing interest in the matter will themselves consult the original article, as being the most important contribution to the study of animal vaccination since Dr. Seaton's famous report of 1870.

The paramount question which Dr. Martin has set himself to answer is whether the virus obtained by the inoculation of

bovine animals with the virus of original cow-pox induces the development of vaccinia of greater perfection, and therefore of probably more protective efficacy, than that obtained by the transmission of the same disease through a series of human subjects? That there may be no mistake as to what he means by the "animal vaccination" which he so strongly advocates, he defines it to be "the inoculation of a young selected animal of the bovine species, from an original spontaneous case of cow-pox, from this others, and so on in continuous and endless series as a source, and the only source, of virus to be used for the protection of the human race from variolous disease." In fact, what Dr. Martin wants is that every vaccination shall be performed with bovine lymph. He admits that this would be more expensive than the ordinary way, but he thinks that its many advantages justify the State in taking the matter up, and paying an annual subsidy, as is done in Belgium, to maintain the supply of lymph. Dr. Martin gives a careful and most interesting account of the laborious experiments and observations in which he has been engaged for seven years, during which he has vaccinated and superintended the vaccination of 580 animals ,besides some 40 more in his earlier experiments. From these animals over 800,000 charged points, and an uncounted but very large number of crust and tubes of lymph, were issued by him. He has supplied the Departments of War and of the Interior with large quantities of virus, principally in the form of crusts, for the vaccination of troops, frontiersmen, and Indians, and in one instance supplied 3000 points for the arrest of a variolous epidemic which threatened the annihilation of an Icelandic colony in North America. This stock was originally derived from the celebrated case of spontaneous cow-pox which occurred at Beaugency in April 1866; and Dr. Martin asserts that, though this lymph has been passed through 830 animals, he can detect no shortening of the duration of the induced disease, no indication of change, however slight, from the standard of excellence observed in his first vaccinations over six years before. He does not, however, say what proportion of the lymph supplied by him in such profusion was unsuccessful. We suspect this proportion would prove by no means small, for animal vaccination is well known to be much less certain in its effects than that performed with humanised lymph. Still, according to Dr. Martin's report, the conditions of success have much improved of late, and we think it would be very desirable that the Government of this country should make inquiry without delay into the validity of the advantages which Dr. Martin claims for animal lymph.

Chiefest amongst these advantages is stated to be the induction by its means of a far more perfect development of vaccinia than follows the use of virus of long humanisation. Dr. Martin goes at great length into the peculiarities of the phenomena of typically perfect vaccination, and he points out very truly that the nearer the intentionally produced disease approaches in its characteristics to that casually produced on the hands of milkers, the safer we are in assuming for it a like permanently protective influence. Dr. Martin's experience has convinced him that the vaccinia from bovine lymph exhibits the phenomena of the disease induced by virus of very early removes from the cow-pox, which much more nearly approaches that observed in the casually produced cases than does the disease arising from the use of virus of long human transmission. He thinks, therefore, that the wonderful uniformity of the vaccinia which has for eleven years been induced by the use of bovine lymph, its constancy to its own type, and the nearness of that type to the development of disease, most surely proved to be perfect, justify us in considering the use of animal lymph as an absolute advantage. Amongst other advantages claimed for it are the impossibility of invaccinating with it any other infections, and the consequent calming of the apprehensions of parents, its ability to furnish large amounts of virus regularly, and at very short notice, and the obviation of the necessity of interrupting the development of the vaccine disease by tapping the vesicle to obtain lymph. Dr. Martin even finds in the expense of animal lymph a redeeming feature, because he thinks that to carry his plan out properly it must be under the supervision of Government, and thus there would be a known responsible source to which all complaints of those vaccinated could be referred. True bovine vaccination is stated by him to be never complicated with erysipelas, and to induce in a vastly greater proportion than Jennerian lymph unmistakable vaccinal effect in cases of re-vaccination. As regards this large question, Dr. Martin's figures are both instructive and interesting, and we can only regret our inability to reproduce them here.

Against the alleged disadvantages of animal lymph, such as that the vaccinia induced by it is objectionably violent, that it communicates other animal diseases than it is intended to communicate, that it does not "take" easily, or "keep" well, that it is very likely to fail, and that it is expensive and difficult to obtain, Dr. Martin argues with his usual energy and pertinacity. We do not think he has altogether proved his case, and especially we think that the establishment by

Government of a sufficient number of heifer farms to ensure that every vaccination shall be performed direct from, or from a very early remove from the calf, is too wildly Utopian to be ever carried into effect, whilst every primary vaccination affords an abundant supply without any expense or trouble beyond the slight labour of collecting it. But we think that the question has at least advanced a very important stage since Dr. Seaton made his report to the Privy Council in 1870, and we should be glad to learn that the Government have determined to direct inquiry into the improvements which have been made in the performance of animal vaccination since that report was made, and especially into the researches of Dr. Martin, whose patience and care we cannot close this review without commending.

The *Sanitary Record* further reports that at the meeting of the Metropolitan Counties Branch of the British Medical Association, a paper was read by Mr. J. Greene, of Birmingham, on "Animal Vaccination." He said that he commenced the practice of animal vaccination shortly after its introduction into England by Dr. Blanc, and that he continued it more or less assiduously for eight years, during which time he inoculated or experimented upon about 400 animals, chiefly with Belgian lymph. His advocacy of the supply of lymph from animals was confined to its use in a limited manner and for a special purpose. It would be cumbrous, expensive, and, in fact, impracticable for many reasons to protect any considerable percentage of the population by inoculation from the calf. Animal vaccination presents, however, an ever-flowing fountain of lymph of a relatively high standard of activity for the renewal of stocks at any time, when opinion or accident makes it requisite. The lymph should be produced at one establishment only in the kingdom, so as to discourage any wide tendency on the part of the public to have recourse to animal vaccination in a too frequent or unnecessary manner, which would soon result in the destruction of the chief function warranting its existence.

Mr. Greene discusses the question whether the occasional recourse to new stock is necessary for the preservation of power, and whether, on any other grounds, it is expedient. Whether it is necessary or no, he thinks it is expedient, and that this expediency is demonstrated by the fact that hundreds of medical men whose opinions have been formed by their own meditations and experience earnestly desire this renewal, as well as thousands of the instructed part of the

community at large. The assertion that cow-pox on calves, being on its natural soil, can never change, was next examined and disproved. Mr. Greene's own observations have convinced him that deterioration of lymph takes place alike on calves as on man. Whilst, therefore, the animal is a useful intermediary, by which we may multiply the primary virus *ad libitum*, and deprive it of the too violent action which Estlin and others found so objectionable, Mr. Greene thinks that Dr. Martin's suggestion to use animal lymph for every case is not to be recommended. Mr. Greene describes his experience of animal lymph, both in its propagation and its effect on the vaccine. He found that the vesicles developed more slowly, that the crusts did not fall till about the twenty-second day, and that the constitutional action was decidedly more marked than with the old lymph. Not a single child escaped entirely—all being made manifestly poorly, restless, and feverish. He thinks care goes a long way to rectify the uncertainty of animal lymph, which he never found very troublesome. In re-vaccination his success was good, exceeding the percentage obtained in Belgium. In all cases that succeeded, the febrile symptoms were well marked; in many, rather severely, and in several so much as to confine them to bed. Through all his experience, however, in primary cases, he has not once had cause for regret.

Mr. Greene has now ceased to reproduce lymph on his own calves, but as he has always held that the advantage which calf-vaccination gives in overcoming the strong dread of some people of the transmission of diathetic diseases by human lymph was worthy of attention, he has continued to procure and use animal lymph from Belgium, which has been derived from Milan. Mr. Greene appealed to the Government to discover fresh cases of cow-pox, and when found to take the lymph and experiment for themselves. He is one of the few who had been successful in producing artificial cow-pox; but though he has tried many times, he has not since succeeded. He looks hopefully, however, to increased experience to remove the difficulties attending the operation, which is admittedly a precarious one.

LIVE STOCK INSPECTION.

A CORRESPONDENT of the *Live Stock Journal* calls attention to the imperative need for something in the nature of sanitary inspection of London "dog-dens." There can be little doubt in the mind of any one who knows what some of

these "dens" are, and who are the men who keep many of them, that both in the interest of public health and for the prevention of gross cruelty such inspection is urgently called for. The front shop of a London dealer in live stock must always be an object calculated to afford pain to all thoughtful lovers of animals, but it is to be feared that in many cases the back premises and underground portions of such establishments are infinitely worse. The correspondent referred to speaks of one or two cases that have come under his own notice. In one instance a room five feet wide by five feet ten inches in length contained fourteen dogs confined in cages in which they could not turn themselves, and from which the stench was something horrible. There are no doubt hundreds of such rooms in London, and in many cases cellars are stuffed about as full as they well can be of animals of various kinds, all in close confinement, in all but total darkness, and in indescribably foul air. Of course, large numbers sicken and die, but it is commonly understood that the profits of many of these dealers are large, and that a heavy percentage of loss is no very serious matter. The exigencies of trade seem to compel the utilisation of every foot of space to the utmost, and it will always remain so until a beneficent law steps in and imperatively insists upon it that such trades shall be carried on under fairly wholesome and humane conditions. The way in which dogs, brought up, perhaps, with every care and kindness, are shut up in cages and stowed away without human companionship, with scanty food and drink, and with barely room to move, and that very often for weeks and months, is barbarous in the extreme; and when to considerations of humanity we add the pestilent effect these ill-regulated menageries may exert in close neighbourhoods, it becomes pretty evident that constant official inspection and regulation are urgently called for.—*The Globe.*

REPORT ON THE PATHOLOGICAL ANATOMY OF PLEURO-PNEUMONIA.

By Gerald F. Yeo,

Professor of Physiology in King's College, London.

(*Concluded from p.* 524.)

We meet these same phenomena in the same order in pleuro-pneumonia, and we must find a more satisfactory

explanation of its peculiarities and divergence from ordinary inflammation than the simple statement that it "is not inflammatory in any of its stages, and never presents any of the phenomena which are associated with inflammation."

In the part where the peribronchial exudation is most firm, and the tissue most densely infiltrated with new cells, the proper walls of the air-tube are invariably much thickened, and show signs of long-standing disease. The lining membrane of this part of the bronchus is also quite destroyed by a process of ulceration, the epithelium cells being cast off, and forming part of the plug which fills the calibre of the tube.

In those cases where there has been but little time for the disease to spread by the lymphatics, the destruction of the mucous membrane is more extended than the thickening of the peribronchial lymphatics. In short, the mucous membrane seems more extensively diseased than any other structure, in the very early stages of the affection.

From this it would appear that the irritation of the peribronchial lymph-channels is produced by a form of chronic inflammation in the structure of the bronchial wall which is brought about by the disease of the mucous membrane.

So constantly have I met with this condition in the opaque parts that I have but little hesitation in affirming that the disease commences in the air-passages as a chronic inflammation, associated with destruction of the bronchial mucous membrane. I cannot say what is the exact size of the tube in which the inflammation begins; it seems likely that the lobular bronchi are those most readily affected, and certainly the very small tubes are invariably attacked, even when the disease is in its most recent stage. The impression left on my mind is, that the delicate lobular bronchi are those first attacked in the majority of cases, though often the morbid processes are more striking in those tubes about the size of a quill.

As to the immediate exciting cause of this strange form of bronchitis little can be said. No light is thrown on the subject by the morbid anatomy, no constant specific elements have been found in the affected part. The ætiology of the disease must be studied clinically and experimentally. The only suggestion I should presume to make upon this subject is a plain deduction from the reading of the pathological events as I have traced them out; it is this, that pleuro-pneumonia being a local disease, starting in the bronchial mucous membrane, it can only be produced by direct and immediate infection of that membrane, and it is little to be wondered at

that inoculation of the tail, or other part, cannot produce the local disease in the lung, though it may set up, in the part operated upon, a form of progressively infective inflammation, which runs a course not unlike that of the lesion of the lung. I have had many opportunities of satisfying myself that when a tail is "successfully" inoculated the subcutaneous connective tissue undergoes a change exactly like that between the lobules of the lung, and the infective process rapidly spreads by the lymphatics.

I can well understand how a beast, by sniffing the fodder of a diseased neighbour, may draw into its air-passages some of the dried discharge, and thus infect its bronchial mucous membrane and get pleuro-pneumonia, while all the skill science can apply will not induce the disease of the lung by mediate contagion, *i.e.* the inoculation or injection under the skin or into the vessels of infective material procured from a diseased lung.

Whether there be any special virus which acts as the specific cause of this disease or not, must also be left to experimental inquiry to determine positively. I have searched in vain for a morphological element which could be regarded as the *materia peccans*. However the general aspect of the morbid processes gives one the idea that some peculiar infective product is at work. In very many cases foreign elements, so peculiar as to provoke suspicion, have been found, but further investigation failed to bring home to them the necessary pathogenic properties, as they have generally proved to be inconstant or harmless substances, whose presence is either accidental or unimportant.

The fact that no morphological representative of an infective material can be found, is no proof that it does not exist. How long is the list of diseases which are acknowledged on all sides to depend on the presence of a peculiar virus ? How very few—if there be any—of these specific materials do we known in any other way than by the effects they produce? Some, we know, cause a general affection of the blood, some a peculiar primary local lesion, and subsequent general infection, others again give rise to a purely local inflammation with a specific character. In the latter category I am inclined to place the virus of pleuro-pneumonia. When applied to the bronchial mucous membrane or introduced into any lymph-bearing tissue, it sets up chronic inflammatory changes associated with excessive exudation. Ordinary inoculation illustrates this perfectly. The operation causes practically no inflammation ; but after a definite period of incubation, varying from ten to fourteen days, a local specific inflamma-

tion is produced in the connective tissue; but this is not accompanied by any constitutional disturbance, except when it spreads extensively: timely amputation of the tail, however, usually prevents this unfortunate accident, and the animal quickly recovers without having any traces of a blood-disease.

I abstain from attempting to discuss the many abstract questions or theories which have from time to time been introduced into the study of this peculiar affection. Whether it be real inflammation, or some mysterious specific change differing from all other diseases; Whether it be comparable with any human disorder; whether it be zymotic or not, &c. These are very interesting speculations, but their consideration is not very likely to lead to any immediate practical result; and therefore it appears to me more profitable to attempt to unravel the intricate sequence of pathological events, and trace the successive steps of the morbid changes which occur in pleuro-pneumonia, for I am satisfied that it is along this track we must travel, if we hope ever to arrive at the true pathogeny of the disease.

To recapitulate, then, the various items in the pathological sequence may be thus enumerated:

1. Irritation of the mucous membrane of the smaller bronchi probably by some infective material (specific virus?).
2. Chronic ulcerative bronchitis, localised to a few minute bronchi.
3. Occlusion of the affected air-tubes.
4. This produces such changes in the air-cells belonging to the affected tubes that the lobular parenchyma becomes solid.
5. As the bronchial disease progresses, the walls of the air-tubes become thickened and infiltrated with the products of chronic inflammation.
6. The peribronchial lymphatics are implicated the extension of the infective process from the bronchus, and are soon filled with dense exudation.
7. The block in the lymphatics of the broncho-vascular system impedes the flow of lymph from the corresponding territory.
8. The tributary lymph-channels are thus mechanically engorged, and at the same time they are irritated by infective materials.
9. The inflammation of all the coats of the air-tube gradually spreads towards the root of the lung.

Thus we have a deep-seated cone of typical consolidation, traversed by numerous wide whitish lines, corresponding to

the swollen interlobular connective tissue (marbling). In fact, the essential features of the disease are all established.

The morbid process seldom stops here, however. It spreads in two ways.

First by the broncho-vascular lymph-passages :—

1. The irritating and infective materials find their way along the lymphatics towards the root of the lung, following the normal course of the lymph stream.

2. The wall of the bronchus becomes affected after a time by the irritative matter in its surrounding lymphatics.

3. The lymphatics of tributary bronchial tubes met with as the disease thus advances, are choked, and the drainage of their territory impeded.

4. The interlobular lymph spaces of the newly affected territory soon become filled with exudation. Thus the clear kind of consolidation is produced.

Secondly, by the pleura :—

1. The pleura becomes affected over the focus of consolidation by means of the subjacent lymphatics.

2. The pleurisy soon extends far beyond this limited region or the serous membrane becomes generally inflamed.

3. From the inflamed pleura infective materials reach the lymphatics beneath it, and also those lying between the neighbouring superficial lobules.

4. Extending along the interlobular lymphatics, the irritation and exudation may pass towards the deeper parts, so that an immense tract of lung is converted into a semi-translucent mass with swollen interlobular spaces.

The consolidation formed in any of these ways may become intense induration, if the animal lives long enough.

With regard to the origin of the disease of the vessel wall we must also start from the peribronchial disease.

1. The lymphatics of the bronchus readily allow the morbid products to pass to those immediately around the vessels.

2. The wall of the vessel becomes greatly thickened by chronic inflammatory products,

3. The inner coat—which resists the disease for some time—ultimately becomes diseased in small patches.

4. The blood coagulates over the diseased inner coat, and may occlude a small branch at its origin, or even the entire vessel.

5. Particles of the clot may break off, and passing into the minute arteries, from their embolic plugs.

6. Thus numerous arteries of varying size may be stopped up.

7. The most varied forms of hæmorrhagic infarction, are thus produced.

8. The infarction may become gangrenous, cheesy, or may dry up into a crumbling mass.

9. A capsule may form around the most diseased part, and shut it off from the rest of the lung.

If asked to give a pathological definition of pleuro-pneumonia I should say that it was :—A chronic, specific, local disease, starting in the bronchi, and insidiously implicating the parenchyma of the lung by occlusion of the bronchi and inflammation extending along the lymphatics: the other organs and the blood possess a singular immunity from the specific contamination. It is not accompanied by constitutional symptoms, and only gives obscure physical signs. At any time during the progress of the disease its existence may be manifested clinically, by the occurrence of complications — acute pleurisy or hæmorrhagic infarction with pleural inflammation—which excite high fever, with various functional derangements.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

The Quarterly Meeting of the above Association was held on Wednesday, the 11th September, in the London Hotel, Edinburgh, Professor Baird, of the Dick Veterinary College, occupied the presidential chair. There was a good attendance of members. Mr. Spreull, F.R.C.V.S., Dundee, and Mr. A. Baird, M.R.C.V.S., Edinburgh, were elected members of the Association.

Professor Walley again called attention to the desirability of members joining the Mutual Defence and Benevolent Association, and moved, "That the Secretary inquire what steps have been taken to bring the matter under the notice of the members." The motion was seconded by *Mr. Robertson, F.R.C.V.S.*, Kelso, and carried.

The following resolution, moved by *Professor Walley*, and seconded by *Mr. Robertson*, was carried unanimously :—"That the Secretary be instructed to issue circulars, calling the attention of the members of the profession in Scotland to the movement at present on foot to present Mr. George Fleming with a testimonial, and that he be empowered to solicit and receive subscriptions towards a fund for that purpose."

Several interesting pathological specimens were brought for

the inspection of members by Professor Walley and Mr. Storie, M.R.C.V.S., East Linton. The following is the history of one of these, as related by Professor Walley.

Case of Abscess in the Right Arytenoid Cartilage.

On the night of the 29th of May, my attention was directed to a valuable dark-brown lorry horse (seven years old), which was said by his driver to have gradually become a roarer. The driver had noticed a roaring sound in the breathing of the animal when at work, for several weeks, and had spoken of it to the horse manager, who treated the matter lightly. On examination I found that a distinct roaring sound was heard, even while the animal was quiescent in the stall; it was much increased by excitement. External manipulation of the larynx caused violent coughing and uneasiness. Both externally and by manipulation through the mouth, I detected hardening and enlargement of the larynx. The animal was in perfect bodily health and condition. I contented myself at the time with the application of ungt. hydray. iodid. to the region of the larynx, ordered him to be put into a loose box, and his diet to be carefully regulated. The following day the difficulty in breathing became so great as to necessitate the operation of tracheotomy, which I had, owing to the great swelling caused by the blister, to perform at the lower part of the neck. Immediate relief followed the operation, and for several weeks all appeared to be going on favorably, with the exception that more thickening of the tissues around the seat of operation took place than usual. In about three weeks a large quantity of pus began to find its way through the canula, and although it gradually decreased in quantity, it became more adhesive, and contracted a sickly odour, with all the physical properties of fistulous discharge. It frequently plugged up the canula. The tissues in the seat of operation became considerably thickened and indnrated. About a month after the operation the horse was sent to work in traces, but it was found that a very little exercise was sufficient to produce great distress, excessive perspiration, and loud roaring. This led me to suppose that some obstruction existed below the seat of operation. Physical examination of the thorax, with exploration of the trachea by the aid of a male catheter, failed, however, to satisfy me on this point. A mercurial blister was applied over the larynx and to the anterior pectoral region, iodine administered internally, and subsequently setons inserted on either side of the larynx. All treatment was of no avail; and in four or five weeks after the operation, repeated spasmodic attacks of dyspnœa (sometimes twice during the night) came on, threatening suffocation. Each attack lasted about five or ten minutes, and during its continuance the animal evinced the greatest signs of distress—the tongue becoming pendulous and livid, and the mouth widely open. It is a curious fact that the removal of the tracheotomy tube, the passing of the finger through the aperture in the trachea, and the reinsertion of the tube, nearly always caused these symptoms to pass away. Seeing the unusual nature of the case, I submitted it to the examination of my colleague, Mr. Baird, and subsequently to Professor M'Call, both of whom coincided with me in the opinion that, unless some mechanical obstruction existed in the lower part of the trachea, the paroxysmal attacks of dyspnœa must have a nervous origin. If the animal was hurried for a distance of ten yards at this time, a dyspnœic attack was induced. About 7 p.m. on the 12th August, the horse died, after a few minutes of intense suffering. I had cast him the previous day, and made a careful exploration of the larynx

through the mouth, without discovering anything more than thickening of the right side of the larynx. *Autopsy.*—Body in splendid condition; throughout the illness the appetite remained good, and there was no evidence of wasting. All the abdominal organs healthy. *Lungs.*—Congested at their upper borders. *Heart.*—Considerable dilatation and thinning of right ventricle, otherwise normal. *Trachea and bronchial tubes.*—Except at the seat of operation, where signs of irritation in the mucous membrane existed, healthy. *Larynx.*—On opening this organ, a fistulous opening, about the size of a crow's quill—through which fistulous pus oozed on pressure—was discovered at the upper and inner part of the right arytenoid cartilage, which was bulged and considerably thickened. Section through the cartilage exposed an old cyst in its very centre, its walls being thick and vascular, and containing pus. Unfortunately it did not occur to me, until too late, to make an examination of the pneumogastric nerve. The conclusions at which I have arrived are, that from some undefined cause, an abscess had formed in the centre of the arytenoid cartilage, in due course evacuation of its contents had taken place into the interior of the larynx, a secretory pyogenic action in the sac had continued, a permanent fistulous orifice was established, and the pus had insensibly flowed down the trachea and been expelled through the canula. I have not the slightest doubt that the paroxysmal attacks of dyspnœa were to a great extent of a nervous origin. The cause of the pulmonary congestion (through its seat, the upper border of the lungs, was unusual) and the cardiac dilatation is manifest.

Mr. Robertson thereafter read the following paper on the "Morbid Anatomy and Pathology of Arthritic or Joint Disease of Young Stock."

My object in introducing for our consideration to-day the subject of arthritic or joint disease in young stock, is not so much that I may publish or give expression to any particular opinions of my own regarding its nature or causes, &c., as that there may be afforded to all an opportunity of giving a plain statement of experience, not an expression of opinion,—a statement from my professional brethren as to those conditions under which in actual practice they have met with this malady. For we may depend upon this, that it is only by a careful recording of facts and phenomena as they exist and occur, that a safe foundation is to be laid for any advances in the science of pathology. We ought ever to bear in mind that medicine is much more a science of *induction* than of *deduction;* that it will not do to construct theories of disease and endeavour to shape facts to suit these; that, rather, must we start from facts; and that a careful and faithful record of these is likely to be of more use in (the) study of disease than the framing of any hypothesis, however ingenious or elaborate. This arthritic disease of young stock, although for ages known and recognised by those connected with the breeding of animals, has not, in this country at least, received from scientific veterinarians that amount of attention which its importance demands, while where ever it has received more than a merely passing attention, either from ordinary observers or from those more specially qualified to interpret its phenomena, the opinions regarding its nature and causes have rarely been exactly alike. Causes *endogenous* as well as *exogenous*, and those very dissimilar in their character, have alike been credited with its production. It has been looked upon as a truly constitutional and hereditary disease; as originating from purely

external causes, operating entirely in a local manner; or as essentially a dietetic disorder, where the errors of dieting have begun to operate on the young, not at birth, but during intra-uterine life. That such different opinions come to be entertained regarding its origin is not difficult to understand, when we find that there is a certain difficulty in laying the whole onus of its production on one isolated condition, and when apparently many and varied influences are operating in its production, or intimately associated with it. It is characterised by uncertainty of appearance, both as respects seasons and locality; it is rather obscure in its etiology, and decidedly destructive in its results. Breeds do not seem to confer an immunity from its attacks, althongh, as the result of my experience, I am free to confess that what are regarded as the more highly-bred and improved animals, those upon which most attention as regards their breeding and feeding has been bestowed, seem more subject to its ravages than others differently operated upon. It is essentially a disease of early life; rarely, if ever, amongst horses and sheep at least, appearing after the period of lactation; most common until the second month of their age; and more fatal in the younger animals. It does appear sporadically, but is most frequently introduced to our notice as an enzootic, and is then most characteristic in features and destructive in its results. Not confined to our own country, it is well known for its speciality of character and untoward terminations over the greater portion of continental Europe; and has everywhere, at irregular periods, caused stockowners much anxiety by its more extensive distribution, or more generally fatal results. If not the very chief ailment of our foals, calves, and lambs, it certainly holds in the list of diseases a position of marked prominence. Its fatality is always great, ranging from 30 to 70 per cent., while of those which do not succumb, the recovery is seldom so complete as to render them remunerative either as feeding or breeding animals. Although occuring in all the three species of our domestic animals—the *equine*, *bovine*, and *ovine*—it is probably best known, because most extensively distributed and appearing in its malignant form, in sheep; while, like too many of the diseases attacking these animals, it has been quietly submitted to as if disease here belonged to the inevitable. The enhanced value, however, of these animals as sources of the food supply of our population, and the steady increasing value of animal food, an absolute necessity in the dietary of our hard-working people, has undoubtedly been the means of directing more attention to the conservation of the health of these creatures. Although the phenomena connected with the appearance and development of this specific arthritic disease in horses, cattle, and sheep, the animals in which it is ordinarily met with, are marked by certain special peculiarities in each species, there is yet enough common to each leading us to regard it as essentially the same affection in all these, and that it most probably owes it existence in each to the same or similar agencies. As far as my experience goes, I am satisfied that with the young of the equine species it is more steady and regular in its occurrence year by year, and that with them it more rarely attains such an extensive distribution and truly enzootic character as with lambs; in both, however, the fatality is excessive. With sheep there are certain seasons when extremely little of this disease is seen; others, again, when its enzootic character is clearly established. It is also worthy of remark that, coincident with and accompanying these enzootic outbreaks, we meet with the appearance of certain peculiar blood disorders, both amongst the breeding ewes and lambs. Whatever has been or may be the relative susceptibility in other countries of the different species of domestic ani-

mals to this disease, I am rather inclined to believe that not until the last quarter of a century has our experience of it in this country entitled us to regard it as at all a common disease of the equine race; while even within this period it seems with these rather to show a tendency to increase. This does not seem to be the case with either cattle or sheep. Over continental Europe it has secured a place in veterinary literature, and attracted attention as a serious disease in the young of all our principal domestic animals for at least a century. I do not, Mr. Chairman and Gentlemen, intend to enter into and describe in detail the symptoms of this affection in either its first or last stage, as seen in the various species of our patients. I reserve this for another and different occasion. What I now wish to direct your attention to, and, if possible, elicit some statement of experience or experiment regarding, is rather in the direction of its pathology, and of those conditions and agencies which apparently have a bearing upon its etiology. There is amongst all of us a wonderful uniformity of opinion as to the diagnosis of this disease. It is rarely confounded with aught else. We are also at one as to the period of life when it is most likely to occur; while the opinion that the mortality is in all cases great, is generally accepted as correct. Beyond these matters, there is, however, very little agreement. The nature of the affection, and the causes which tend to its production, have furnished material for much difference of opinion both amongst stockowners and shepherds, and comparative pathologists. With the former class it has in a general way been regarded as local inflammation of the parts most visibly infected; while, in looking for causes, rarely have they passed beyond the external and local influences associated directly with atmospheric conditions, or character of soil, as to its comparative dampness, &c. Any very extensive and more than usually distributed or severe outbreak has at once been attributed to some meteorological disturbance, or to the influence of contagion. Those of us, again, who have aspired to a little more special knowledge, have for a long period, to put it in the mildest words, been hesitating and uncertain as to our views of the pathology of this serious disease. There has been little definiteness or satisfaction as regards the conclusions arrived at; and opinion has wavered and been divided between these different views of its nature. To one or other of these, the most of us who have given any attention to the subject have at some time sworn allegiance. It has been regarded as a constitutional disease in which, according to the species invaded, either the rheumatic or scrofulous diathesis was in the ascendant. Another view of its pathology, and one largely supported by facts and advocated by the most celebrated comparative pathologists of our time, is that which regards it as truly septic or pyæmic in its origin —the inoculation proceeding from purulent inflammation of the umbilical cord. Another class of observers are inclined to view this affection neither as constitutional nor as primarily septic, but rather as essentially dietetic—a systemic disturbance which, although evidencing itself by certain local symptoms or phenomena, notably in connection with the articulations, is nevertheless essentially a disorder of nutrition traceable to causes local and preventible. Let us endeavour to see how far these different theories are in accordance with the facts and occurrencies which all of us have encountered. There is no doubt that isolated cases amongst all species will present themselves, which can only be understood by taking into consideration the special surrounding and influencing agencies; but this is not what is wanted, nor what we desire. It is rather to see if the majority of cases, if the great developments or outbreaks of this disease, possess any certain diagnostic cha-

racters in common which shall naturally allow it to fall under one of the ordinary accepted views, or in any way enable us to comprehend the causes in operation for its production.

Pathological Anatomy.—With this object in view, we shall first of all glance shortly at the anatomy of the disease as illustrating the deviations and alterations from the usually accepted standard of health, and some of the tissue changes resulting from the morbid processes. The appearances of disease, as exhibited in examination after death, are not confined to the localities ordinarily regarded as the seat of the diseased action, the joints, but may very justly, as Professor Walley has said, be spoken of as systemic and local. In foals dying from this joint disease, there is in the greater number the strikingly abnormal condition of pervious urachus. During life the animal may have voided urine both by the natural channel and umbilical opening. Examination after death in all these cases discloses an extremely unnatural condition of all the structures entering into the formation of the umbilical cord. There is in the condition of all these the same characteristic features—a want of perfectly-developed and carried-out formative action, or the beginning of direct degenerative changes. The urachus, besides its unclosed condition, has its lining membrane roughened, of a dirty grey colour, studded in places with a puriform, varying coloured, aplastic material. The umbilical vein is usually the most markedly altered of the blood conduits; it is much distended, the walls thickened, and its interior having somewhat the same appearance as the lining membrane of the urachus, and spotted in like manner with a greyish-white puriform deposit. The connective-tissue peculiar to the cord holding its different constituent parts together is much changed, and in all those cases where omphalitis has existed, and also in several where such has not been present, we find extending from the umbilical ring to the vena porta and vena cava a chain of cysts or abscesses. Of the internal organs, the liver is that which most regularly exhibits distinct structural lesions. Much increased in size from distension with blood, its colour is usually paler; while under the peritoneal covering-over parts are seen well-marked blood spots, and in its intimate structure circumscribed collections of pus, surrounding which the gland structures appear paler, as if undergoing some fatty change. In many instances the organs of the chest are involved, the serous membranes of the heart being marked more or less distinctly with petechial spots or blood extravasations; while the lungs give evidence of catarrhal-broncho pneumonia, and occasionally embolism of some of the pulmonary blood-vessels is a marked feature. The glandular organs, spleen, lympathic and mesenteric glands, with the serous envelopes of the abdominal cavity, will sometimes show alteration of structure, hyperplastic in nature, with infiltration into their constituent connective-tissue; with the existence in the abdominal cavity of much turbid fluid, having floating in it shreds of degenerating lymph. In addition to these pathological changes in the internal viscera, there is also met with amongst the muscles of locomotion, markedly in the gluteal region, extensive effusions of lymph or serous fluid, mingled with pus and puriform materials. In the blood itself, the formed materials, the corpuscular elements, are evidently alterated, the colourless cells augmented in number, and the others breaking up and undergoing retrogressive changes. With the exception of the open urachus, which is more particularly confined to solipeds, these general structural changes are encountered in all species of our patients—sufferers from this arthritic disease. The local structural changes, those confined to the joints, are not restricted to any one tissue entering into the formation of these parts, but are met with in all. Variations undoubtedly exist as to the extent

to which these structures may be severally invaded, and being formed of somewhat differing elemental tissues, they must of necessity comport themselves somewhat differently under the same diseased action. In cases of recent origin we may see little save infiltration of the tissues external to the articulation affected, with evidence of inflammatory action in the synovial membrane; the majority of those cases, however, where an autopsy is carried out, having existed for some time, exhibit more marked changes of structure, membranes are thickened, softer, and less clear. The capsule of the joint is distended with an extra quantity of a dark-coloured fluid, having floating in it detached shreds of softening and degenerated lymph. The cartilage covering the articular extremities of the bones is discoloured in patches, and roughened or eroded, to which is adherent patches of the same partly-organised lymph, mixed with purulent material. The condition of the long bones entering into the formation of the articulation, deserve special consideration. I have, in the great majority of the cases of joint-ill, in all species of animals, found the intimate structure of these visibly altered at their extremities. There is thickening of the periosteum, a partial separation of this from its connection with the bone, an opening out or rarefaction of the tubular tissue of the bones themselves, and a distinct bulging of their extremities, the cancellous texture being filled with a yellowish or red-coloured jelly, or sometimes with a paler, cheesy material. The cartilages of development between the epiphyses and shaft show in all these cases a marked alteration, softening of texture from degeneration of the matrix, and increase of cell elements. This alteration of bone structure, so much resembling rachitism, does not occur as a sequel to the inflammatory condition of the other joint structures, as merely a further development and extension of the process, but is seen in very many instances at the very outset of the disease. I am aware that this has been left unnoticed, or, rather, I ought to say, has been noticed, purposely to take exception to its occurring either regularly or on an extensive scale, by that most scientific of pathologists, Bollinger, of Munich; but I mention it, as in my examinations it has repeatedly and for years struck me as characteristic, and in this view I am supported by many others. Roloff, who has paid much attention to the subject, speaks of it as the most diagnostic feature of the disease.

Nature or character of the disease.—The general or constitutional fever and disturbance connected with joint disease, together with the local symptoms of disease and certain tissue changes, have some resemblance to rheumatism in its ordinary acute form, and as such it has by many been so regarded. No doubt in most of our patients rheumatism is met with; and it is perfectly intelligible that the rheumatic diathesis may be developed coincidently with this or any other articular disease. Still there are many reasons preventing us from giving full acquiescence to the statement that this arthritic disease of youngstock is simply acute rheumatism. The general fever of this joint disease is certainly less of a sthenic character, and the results of the local morbid action peculiar to it are more fertile of tissue change and destruction than in true rheumatism. The tissues usually primarily involved in the one disease are scarcely those so attacked in the other. In rheumatism, the fibrous structures surrounding the articulation are, as a rule, the first and chiefly affected; in the arthritic disease we are speaking of, the first onset of disease is nearly as often seen in the interior and more intimate joint textures, not unfrequently in the bones themselves in the cancellated tissue of the extremities of the long bones entering into the formation of the articulations. In ordinary rheumatic disease the inflammatory action is more

liable to shift its situation from one articulation to another, and less given to result in the formation of pus than in this; the results of the local diseased action in the former rather tending to become organized, while in the latter they are more given to degenerative changes. Again, the causes of rheumatism, although they may be considered as truly constitutional, are nevertheless more dependent for their development on conditions of localization and appreciable external influences than this other. It is, moreover, more amenable to treatment. That this disease is truly scrofulous, I am at the present time less inclined to believe than I was some years since. Scrofula, in any form, as Professor Walley has aptly remarked, can hardly be regarded as familiar to us in an enzootic form, which this joint disease is. Neither do we find here, as we do in that condition, deposits or collections of new-formed and adventitious material, the so-called tubercular matter in the lungs or lymphatic glands,—situations extremely prone to exhibit such changes in scrofulous subjects. There is, no doubt, in the minute tissue of the bones and in and around the articulations themselves, the presence of a new-formed material, somewhat like the matter of tubercle; but I have grave doubts regarding the identity of these two morbid products. The constitutional fever attendant on this arthritic disease is also somewhat different from that associated with scrofulous arthritis. In this condition it is more pronounced, reaches more rapidly, and maintains more steadily without exacerbations, a high temperature. Another difference between these two affections is to be found in the subjects attacked. In the one case, that of joint-ill, they are all of one class—the very young; in the other there is no such restriction. Again, I am tolerably certain that, by a particular dietetic treatment of breeding animals, we can ensure a very large percentage of this disease in the offspring. The same cannot be said of scrofula. Another very well supported view of the pathology of this joint disease, and one which lately has been gaining ground amongst the Continental comparative pathologists, is that which regards it as purely *pyæmic* in character. The chief exponent of this idea is Bollinger, of Munich. In referring to what this distinguished veterinarian says regarding this disease, Fleming, in his 'Veterinary Obstetrics,' says that "this septic or pyæmic nature of the disease has not, to my knowledge, been pointed out, or at least insisted on, in this country." Now, if you refer to Gamgee's 'Domestic Animals,' vol. 2, p. 326, you will there find it referred to under the name of pyæmia agnorum; this, I believe, being the name given to it by me in communications during 1863. Unfortunately, in treating of the nature and symptoms in the pages which follow, the description has got mixed up with what is spoken of as the arthritic disease of lambs. At that time I entertained the idea that the *septic* or *pyæmic* character of the disease, in conjunction with the existence of a peculiar *cachexia*, were the points which alone explained all the phenomena exhibited during its development and progress; now, however, I feel disposed to doubt this. In the opinion of the pathologist just mentioned, as one of the chief advocates of its septic nature, the varied phenomena and complications are believed to be the result from metastatic *pyæmia*, which again originates from purulent *omphalo phlebitis*. Now it cannot be for a moment doubted that *metastatic pyæmia* is a chief feature of very many—probably of the greater number—of the cases of joint disease both in lambs and foals; as also that in almost all these cases this *pyæmic* state is preceded or accompanied by *omphalitis*, but that the prior existence of *omphalitis* is absolutely needful ere we can have a development of the other, and more ordinarily recognised, characters of joint disease, I must be allowed to doubt. May not the

pyæmic state and the existence of multiple abscesses have a different origin, and bear a different explanation, than that of regarding them as a sequela to a purulent umbilical cord, even where this condition of *omphalitis* and umbilical *thrombosis* exists? In every extensive outbreak of this disease, and very generally as a feature where its enzootic character is less strongly marked, cases are met with where all the features of constitutional disturbance—with the local symptoms of pain, swelling of joints, and the existence of abscesses amongst the muscles—are observed; while the examination after death shows the usual and varied structural changes within and around the articulations, together with the presence of multiple abscesses in the liver and spleen, hyperplasia of lymphatic glands, and tissue changes in the great serous membranes, without any well-marked inflammatory condition of the structures of the umbilical cord. While, again, I have frequently encountered in calves very serious cases of purulent omphalitis, unattended with joint complications; and when these cases have terminated fatally, I have more often, in *post-mortem* examinations, found numerous collections of pus (particularly in the liver) alone, than in combination with complicated arthritic disease. In regarding this disease as simply *pyæmia* or *septicæmia,* resulting from purulent *omphalo phlebitis,* we have a numerous and well-arranged series of facts and observations to support us; still it seems to us at least as rational a conclusion, and one open to fewer objections, and capable of explaining as satisfactorily the many complications and phenomena, to regard it as a constitutional dietetic disease, having its origin during intra-uterine life,—the varied tissue changes, &c., met with in the subjects affected being but the natural result of the effort put forth by the system to form healthy tissue from ill-elaborated and imperfectly formed blood. We are the more inclined to this view from the following considerations:—1st, That in very many cases of the disease there exists those most obvious and characteristic systematic organic lesions, disseminated abscesses in the umbilical cord and structure of the liver, &c., not only very shortly after birth, but during the latter period of intra-uterine life.

If *omphalo phlebitis* in these cases precedes the development of pyæmic abscesses and infiltration, it cannot certainly be the result of innoculation with septic matter from sources without the animal itself, the manner in which this poison is said usually to be implanted. 2nd. In all well-established enzootic outbreaks of this joint disease in sheep, the lambs are not the only sufferers, the ewes being also seriously affected with varied systemic or blood disorders. Walley says, Malignant parturient fever. I have experienced both this and probably to a greater extent wide-spread *anæmia*, the general malaise in both mother and progeny pointing to some well-established condition of malnutrition. 3rd. The anatomy of this diseased condition. Witness the imperfectly closed umbilical ring and pervious urachus of foals; and the rarefaction and chemically defective condition of the bones of all sufferers, seem to indicate a want of formative power and tissue development in the fœtus. 4th. That by a certain dietetic treatment of ewes a very large per-centage of cases of joint-ill may be produced at will, as also that when this treatment is altered or reversed with the same animals next season the condition of matters is changed, to be again reproduced on a repetition of former treatment. 5th. That it frequently takes the form of an enzootic amongst our ruminants, but rarely with the solipeds. If we are correct in regarding this as a disease of malnutrition, a disease resulting from the attempt of the system to form healthy tissue from ill-elaborated and imperfectly-formed blood, the result primarily of

faulty dietary, we have not much difficulty in understanding that with foals there is the probability that this will never reach so thoroughly an established enzootic character as it may do with lambs or even calves. The faulty dietary of our ruminants, particularly of our sheep, when such exists is more likely to take the character of extensive localisation than that of our horses. Cattle, and more particulary sheep, are more largely indebted for their food supplies to what are more properly regarded as the ordinary and natural productions of the places where they are located ; and should any causes be in operation inducing a deterioration of the healthy and necessary elements of these, such adverse conditions are more likely to operate prejudicially in these animals than in others more artificially circumstanced, that is, less dependent upon such natural products in the matter of diet.

It was agreed that the subject of Mr. Robertson's paper should serve for discussion at the next quarterly meeting.

The proceedings were brought to a close with a vote of thanks to Professor Walley and Mr. Storie for their trouble in introducing specimens, and to Mr. Robertson for his paper.

J. MacFadyean, *Secretary.*

ARMY APPOINTMENTS.

War Office, Pall Mall, Sept. 24.

5th Hussars.—Veterinary Surgeon Thomas Flintoff, from the Royal Artillery, to be Veterinary Surgeon, vice S. L. Pallin, transferred to the 18th Hussars.

18th Hussars.—Veterinary Surgeon Samuel Luis Pallin, from the 8th Hussars, to be Veterinary-Surgeon, vice Veterinary Surgeon of the First Class J. Mills, transferred to the Veterinary Department.

Veterinary Department.—Veterinary Surgeon of the First Class John Mills, from the 18th Hussars, to be Veterinary Surgeon.

OBITUARY.

We have to record the death of Mr. Frederick Bailey, M.R.C.V.S., Leicester, on August 25th, aged 44 ; formerly Vet. Surg. 9th Royal Lancers. His diploma bears date May 11th, 1854.

Also of Mr. C. Hirst, Barnet. His diploma bears date April 27th, 1859.

And of Mr. Frederick Augustus Augar, M.R.C.V.S., Walpole, Suffolk, aged 24. His death took place on September 15th, after a short illness. Diploma dated April 5th, 1877.

ERRATUM.

No. 608, August.—In report of "Eastern Counties Veterinary Medical Association," p. 543, line 4, *for* Ol. Tinct. *read* Ol. Tereb.

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Communications and Cases.

ROYAL VETERINARY COLLEGE.

OPENING OF THE SESSION 1878-9. — INTRODUCTORY ADDRESS BY PROFESSOR BROWN.

R. B. Berens, Esq., in the Chair.

My first duty, sir, is to offer a few words of acknowledgment and welcome to the large audience which I have the honour to see before me. We have visitors representing the Government, the Army, the Veterinary Colleges, and the Medical and Veterinary Professions. In the name of my colleagues, sir, I beg to offer those gentlemen our thanks for the support which they have afforded us. Their presence gives to the occasion of our assembling a dignity which it would not otherwise possess. I shall, however, claim the indulgence of our visitors if I address myself now to those gentlemen who represent chiefly the future of our profession; I mean the students who are about to commence or to continue their studies. To you, gentlemen, I would say at the outset, that you have entered upon a work which promises few opportunities of relaxation. You are now placed under conditions which, as compared with those which obtained some quarter of a century ago, are entirely novel. You have an extended curriculum, a large staff of teachers, and opportunities which those of a former period longed for in vain. It is for you to take advantage of the facilities which are so liberally offered. You will be

called upon to study, during the next two or three years, a variety of subjects relating to the animal, plant, and mineral kingdoms. Possibly some of you have come with general ideas of the meaning of science, and probably those ideas are vague and even erroneous. You are in the habit, perchance, of thinking that science is all very well in its way, but that it is rather of the nature of an interpolation, to which an undiscerning but supreme authority insists on your devoting a certain amount of your attention before you are permitted to enter on, what to you is the real business of your lives, the practice of your profession. Suffer me to disabuse your minds of this idea. Science is emphatically knowledge, and whatever result is so formulated that you cannot write in reference to it "*Quod erat demonstrandum*," may be philosophical or speculative; it cannot possibly be scientific. Science comprehends the sum of human knowledge, and in order that in the space of a short life you may be able to grasp something of this very wide subject it is essential that you should select. To this end you have to resort to artificial divisions, and primarily you find it desirable to distinguish between the living and the dead; between biology—the science of life, and abiology—the science of things which are not possessed of life. In doing this you discover infinite diversity, in fact, the work of the scientist is to observe the distinction between things that differ. Suffer me, however, this morning to depart somewhat from this rule, and to endeavour to give you some general idea of the relations really existing between the mineral, plant, and the animal kingdoms.

The question constantly presents itself to your consideration—What is it to be alive? and you have all some opinion on the subject. You know that living beings exist, that they grow, move, eat, drink, sleep, and think. You are in the habit, perhaps, of conceding certain vital attributes to the plant world, but, after all, you do this merely in the way of a concession. You admit, because the facts are too strong for you, that plants really do live, and that in a sense they have vital functions, but life in its palpable form is, in your idea, concentrated in the higher animals. You say plants do not move, they do not think, and you hardly are inclined to admit that they even digest their food. But if for a short time you permit me to indulge in what I may call the romantic and poetical side of science, I hope to modify this view somewhat; and in return I promise you for the rest of the session to be as dreary as you can possibly conceive. This view of the subject will,

at any rate, interest if it does not inform you. "*Nemo mortalium omnibus horis sapit.*"

To start, then, with the notion of life as you see it manifested in the animal; the creature exists and moves, obtains its food, and converts it into part of its own organism, manifesting, meanwhile, in all its actions intention or instinct. Finally, it ceases to perform these functions—it dies, and is resolved into new compounds. Now, in reference to the plant world, it may seem to you somewhat absurd to ascribe to a flower or a tree any of the functions which so exclusively, in your minds, belong to animals. But let me introduce to you the views which have been advanced by Mr. Charles Darwin in a recent lecture, and explain to you certain phenomena which are closely allied to those which are manifested by the higher animals.

First I will refer to the peculiarity which is illustrated in certain classes of animals the young of which depend upon the parent for some time after birth. We know that there are animals, a large number of them, which at birth are ready to get their own living, but others remain either in direct contact with the parent body or in some indirect association with it. In the case of the kangaroo the young animals inhabit a maternal pouch, in which they remain and are fed by the mother until they attain a certain state of growth. A singular instance of a similar state of dependence exists in some plants, the mangrove, for example. The seedling of this plant, growing as it does near the sea, is expected to send out its rootlets into soft mud, which is daily flooded by the tide, and, as Mr. Darwin remarks, the most intrepid seedling might very well be discouraged at having to locate itself in such a position. The seed of the mangrove remains attached to the parent capsule until its rootlets are well developed and is no longer likely to be disturbed by the advancing and receding waters.

Then, as to locomotion, animals move from place to place for the purpose of seeking a habitation which suits them. You constantly notice in the plant world most singular instances of a power of selecting a suitable home. There is, for example, a seed which only germinates in moist places, where it sends forth a sticky secretion, and thus secures its position. The seed is wafted by the wind over acres and miles, it may be, of arid soil, without finding a place where it may rest; but immediately that it touches a moist spot, the sticky fluid is secreted, and the germination of the seed takes place under favorable conditions. The seed of the feather-grass, or *Stipa pennata*, is capable of securing a favorable situation

without the aid of the wind or other indirect agency; by the action of a strong barbed plume it bores its way into the hard dry soil, and even in some instances exercises its locomotive powers to penetrate the tissues of men and animals. Among the objects for which locomotion is useful among animals is that of seeking a mate in the proper season. A curious imitation of the courtship of animals, as Mr. Darwin remarks, is found in the vallisneria, the stalk of which grows rapidly through the water till the female flower reaches the surface, and remains there until the male flower breaks loose and floats down the stream to meet her.

Generally the fertilising pollen is conveyed from one flower to another by insects, and it has been remarked that the beautiful odours and splendid colours of flowers are so many baits held out to attract the insect world. But there is a remarkable instance quoted by Mr. Darwin of a plant adopting a new method when the ordinary one fails. In Kerguelen's Land the insects are without wings. The winds which prevail there are so high that all the insects which attempt to fly are carried out to sea and drowned, and those which want to live at all must give up the habit of flying and consequently they lose their wings. As the insects cannot fly, the pollen in a variety of wild cabbage is obliged to fly for itself, and accordingly the plant produces a dry dust-like pollen, which is readily carried by the wind. It is worthy of notice that this cabbage is the only example in the large order of the Cruciferæ which is fertilised without the assistance of insects.

We may go further than this, and observe remarkable actions in some varieties of plants, which are comparable to the instinctive actions of animals. Plants, you know perfectly well, have roots which grow downwards and stems which grow upwards; you recognise the fact, and see nothing remarkable about it, but after all there is no structural reason why the stem should grow up and the root down; and as a matter of fact stems do not always grow up. There are such things as underground stems, but the law seems to be that plants have a tendency to seek the centre of the earth in one direction, and to seek for the sun or the light in the other. Accordingly you may entice the root of a plant out of its position, by removing all the moist soil to a distance, and if you cause it to grow in a dark place, in which there is a chink through which a ray of light passes, the plant moves towards that point in the exercise of its heliotropic tendency. Although this property, as Mr. Darwin claims, is very much like that of instinct in the animal, it

is less remarkable than another quality which may be compared with memory and habit among animals. A complete illustration is offered by the sensitive plant, the mimosa. This plant has a distinct daylight and a distinct night position. As the darkness comes on the stem rises, the small leaflets approximate to each other, and the plant is shut up. As daylight commences the leaves open, and the stem falls into its natural position.

If you take the mimosa to a region of perpetual day, to Norway for example, it ceases to adopt its night position, and remains in a state of perpetual wakefulness, and if you repeat the experiment by means of artificial light you get the same result; keep the plant always in a state of illumination and it always remains awake; put it in darkness it always remains asleep. But the marvellous thing is that after you have transported the plant from the normal state to the artificial condition, removed it from the situation to where day and night will alternate, you find that it goes to sleep at the proper time for some days after it has been placed in its new habitat, but gradually, under the influence of constant light, it seems to forget all about its previous habits, and ultimately assumes the day position continuously. If you again return it to its normal state, darkness and light following each other, it again acquires the habit of alternately waking and sleeping.

But I must ask you to bear with me while I go a little lower in the scale, and take my illustrations from the dust. Most of you know or have heard something of the laws of crystallisation. You know something of the healing influence of this process in filling up those vast rents in the earth's surface which have taken place during great convulsions at different geological periods; but has it ever occurred to you to inquire why a series of atoms, dissipated in utter confusion under one condition should suddenly recollect exactly their right places, and marshal themselves in those places, I was going to say with the precision of a marching army, but with greater precision than is obtainable under any artificial conditions. You may dissipate a mass of arsenic or of sulphur by the agency of heat, every particle being separated from its fellow; but you know perfectly well, and the fact is so familiar to you that it excites no astonishment, that if you interpose a condensing surface those particles of sulphur and arsenic will rearrange themselves with the most absolute exactness, and in place of an impalpable vapour you have beautiful crystal forms, each crystal being composed of a definite number of atoms, arranged in a definite way without risk of error.

Among the crystals there are forms which insist upon maintaining their integrity under all circumstances, and you find no difficulty in arranging orders of crystals as you arrange orders of plants and orders of animals. You may even, according to the idea of the author of the 'Ethics of the Dust,' find some evidence of a crystal life, some distinct intention in this aggregation of particles, and you may find also some very clear indications of what he calls crystal virtues, the first virtue of a crystal being that of perfectness of form, and the second that of purity.

For a crystal to be at all presentable it must be strictly well shaped, and it must be pure. But you find that some crystals have a tendency to get out of order; a crystal of quartz may grow up with a crystal of spar, both maintaining their proper position, and in no wise interfering with each other. But sometimes both of them seem in the humour to dispute the ground, and the spar crystal will pass into the quartz, cutting and jagging its edges, and altogether losing its own form in the struggle, and you have here something resembling crystal quarrels; you may also find evidence of crystal struggles for life and position, and you certainly find evidence of crystal death, for there comes for them, as for the animal and plant, a period when they have to give up their crystal ghosts, and become resolved into the elements of which they were originally constructed, leaving new material out of which other generations may be formed.

You may inquire, perhaps, gentlemen, how much of this I mean for scientific truth and how much for mere romance, and in very truth I cannot tell you. But I know this full well, that the more carefully and diligently we examine the facts which science brings under our notice the more ready we shall be to ascribe to the term "life" a wider and more passionate meaning than the one which is usually accepted.

But it may possibly have occurred to you while I have been sketching for you a mere outline of part of the country which you will have to explore, that the difficulties which present themselves to you at the commencement are insurmountable, that at the very outset of your career there is "a wall, impenetrable blank." The wall may exist, but for those who seek it diligently, there is a strait gate through which you must all pass, and you must pass in that spirit which is expressed in those words from the Book of Wisdom:

> "Optavi, et datus est mihi Sensus,
> Invocavi, et venit in me Spiritus Sapientiæ,
> Ex preposui illam regnis et sedibus."

You must pray in the sense of strongly wishing for discernment and it will be given to you; you must resolutely ask for the spirit of wisdom and it will come to you; and you can only get wisdom and discernment on the condition that you shall prefer them to all the thrones and kingdoms of the earth. In this temper you pass through the strait gate, and at once you recognise two paths. Whatever of hope exists for you in the future depends on your choice now. There is one very broad and pleasant road, down which you may saunter by easy gradations—"Facilis descensus Averni," till you go right into the gloomy regions of ignorance and prejudice. Once there you sleep the lethargy of forgetfulness, and do not even desire to return.

"Lasciate ogni speranza voi ch'entrate."

But up the other road you must climb by steady and painful effort. Sometimes it may seem to you that all around is dark, clouds are threatening, the sea is troubled, and you lose sight of land.

"Quocunque aspicias nihil est nisi pontus et aër?
Nubibus hic tumidus, fluctibus ille minax."

Be not discouraged, the gathering clouds will be dispersed and the threatening waves be stilled; success is sure if you struggle to attain it by persevering effort; be content to take each day's work as it comes to your hand, and do it with your might; happy if at the evening tide you can say, with the words of honest conviction:

"Something attempted, something done,
Has earned a night's repose."

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By John Henry Steel, Demonstrator of Anatomy at the Royal Veterinary College.

(*Continued from p.* 646.)

Summary.—From the *Recueil de Méd. Vét.* for 15th September, 1878, "On the Application of Esmarch's Bandage to the Reduction of Herniæ" and "Opening of the Congrès National Vétérinaire de France." Also, by Messrs. Bouley and Proust, "Instructions concerning Rabies." From the *Annales de Médecine Vétérinaire* for October,

1878, "An extract on the Testing of Vaccine," as taken from M. Köhler's paper in the *Rev. des. Sc. Med. en France et à l'Etranger*. Also, from the same, "On a new Place of Origin of the Nerves of Vision," by J. Stilling, from the *Revue International des Sciences*. (End of Summary.)

The *Congrès National Vétérinaire* was opened at Paris on the 8th September, and commenced its work by the election of officers as follows:—*President*, M. H. Bouley; *Vice-presidents*, MM. C. Leblanc (Paris); Bouté (Chartres); Quivogne (Lyon); Delplanque (Douai); Lecornué (Nantes); Brunet (Mézidon); Vergelot (Arpajou). *Secretaries*, MM. Rossignol (Melun); *Chief Sceretary*, Viseur (Arras); Parent (Chalon); Garnier (Paris); Larmet (Besançon); Pichou (Chateau Gonthier); Dubourg (Mas-d'Agenais); Baillet (Bordeaux); H. Benjamin (Paris); Pollet (Lille).

The assembly next, on the proposition of the president, named by acclamation as honorary president M. Miltenberger, "the oldest perhaps of French veterinarians, who in spite of the weight of years has not hesitated to make a sacrifice of all his ties to preserve his nationality, and has exiled himself from his dear Alsace to remain amongst us." The first and second sittings were devoted, according to the programme, to the "Study of the best means of Improving the position of private Veterinary Practitioners in France."

The following was the resolution adopted on this point:

"Considering the great evils which result, as concerns the important part of the public wealth which domesticated animals represent from the interfering in the treatment of these animals, of a number of persons who, making a trade of this treatment, in spite of their complete ignorance of the principles of science or of art, considerably aid in the propagation of contagious diseases.

"Considering, also, that among these persons there is a great number who demoralise the minds of country people by supporting in them the most superstitious ideas, in order the more readily to impose upon their credulity.

"The National Veterinary Congress of France considers that, as has been advantageously done in neighbouring countries, legal restrictions should be introduced in France, so that veterinary practice may be exercised only under the sanction of a diploma of the veterinary schools of France.

"It also considers that to veterinarians alone should be intrusted all judical investigations and sanitary inspection of living and dead animals in all places and under all circumstances."

"In a country where veterinary schools are under government, where there is a well-rooted idea "in high places" of the value of the veterinary profession to the public, we may not unreasonably hope for some official response to these resolutions of the Congrés National. We read with much interest the following excellent report by MM. H. Bouley and Proust, as prepared for the Committee of Inquiry on the Prevalence of Rabies, to be forwarded to the ministers by whom the committee was organised. Its value to practitioners and the public will be sufficient excuse for insertion of such a lengthy translation.

"It is necessary, then, to remind MM. les Préfets that the biannual reports ought to be regularly sent in by them, and that without these the results of the inquiry are negative. It is easily noticeable, indeed, that the number of departments having furnished reports diminishes every year; in 1861, 187; 84 only in 1862; then from 1873 to 1876 we have replies only from 34 departments.

"The inquiry should always be conducted by members of councils of hygiene. It is scarcely necessary to remark that thus the central administrative body would be furnished with documents much superior in value to those which would result from a purely administrative inquiry.

"The principal elements of each observation ought to be destributed over synoptic tables prepared beforehand, as has been requested. These tables would comprise the indications which form the details of the observations; many of these have been already made known by a ministerial circular of 12th May, 1852, bearing the signature of M. Heurtier. They are as follows:

1. The sex of the person affected or exposed to the contagion.
2. His age.
3. His residence.
4. The species of the animal which has bitten him.
5. The mode of inoculation, the nature and seat of the virulent wounds. We may add that though hitherto the *hand* has been placed in the group with the upper extremities, bites upon that organ, which is generally uncovered, should henceforth be reckoned in a special class.
6. The symptoms which tend to prove the existence of rabies in the suspected animal and their probable causes. We would suppress certain details, which would too much complicate this inquiry, and which also in their nature rather belong to the Committee of Epizootics which has just been formed by the Administration of Agriculture.

7. The date of contagion.

8. The number of persons bitten at the same time and the number of them who have been attacked by rabies. On this matter we may remark that the summary of the inquiry of the committee gives one immunity for two bites, whilst the statistical account of Faber, of Wurtemberg, gives one death only for six persons bitten; that of the hospitals of Vienna gives one death for five; Leblanc gives one in seven. This discrepancy can only be explained by the fact that the administration has a more complete knowledge of the cases where death occurs than of those which remain harmless. We would insist, then, on the importance which is to be attached as well to cases of bites which have not been followed by accidents as to those which have produced rabies.

9. The date of appearance of the symptoms and the duration of the incubation.

10. The duration of the disease.

11. The mode of termination.

12. The preventive means which have been employed against contagion. We require here very circumstantial details. It is not sufficient for us to know whether cauterization was or was not resorted to. We must know the nature of the caustic, how it was applied, if it were deeply and freely applied, or if, on the contrary, it consisted simply of surface washings with more or less dilute caustic lotion.

13. The time intervening between the inoculation and the employment of these means.

14. The modes of treatment and the different remedies resorted to.

15. Any special observations which each case of hydrophobia may suggest.

Such, gentlemen, are the essential elements of the synoptical tables which the préfets of each department ought to address twice a year to the minister. We now come to the second part of our report. The "Instructions" which we have already shown should fulfil three distinct uses:

(*a*). Should make known the measures which should be taken by a person bitten by a mad dog.

(*b*). Should point out what should be done with an animal either bitten or under suspicion of having been bitten by a mad dog.

(*c*). Should point out the symptoms, and especially the premonitory symptoms, of rabies in the dog.

Such an untechnical description would be very efficacious against contagion. We often, indeed, see contagion trans-

mitted by small pet dogs whose condition at first has excited no suspicion among those persons ignorant of premonitory symptoms. We can arrange no better *résumé* of the distinctive characters of rabies of the dog at its different stages than the conclusions of the 1870 Conference at the Sorbonne, as given by M. Bouley.

I. *Treatment of a person just bitten by a dog either mad or suspected to be mad.*

The following should be considered suspicious :

1. Every known dog who, contrary to his character and custom, has become quarrelsome and without any definite cause bites what he finds within reach of his teeth. The better known the bitten persons are to him, the more suspicious he is.

2. Every dog soever which within doors attacks strange persons without being directed to such a proceeding, either in performing his duties as a watchdog or in resenting voluntary or involuntary aggression.

3. Every stray dog which, without cause, attacks persons he meets in streets, roads, or fields.

4. Every unknown dog found straying who becomes suddenly aggressive towards persons who have sheltered him.

Cauterization being hitherto the only known prophylactic measure against rabies the only chance of safety offered to bitten persons consists in the most prompt and complete *cauterization* of the wounds. Of all caustics the best is the red-hot iron, and the more heated the iron is the less painful is the operation. Otherwise, the caustic of Vienna or sulphuric acid may be used. Whilst the iron is warming, or in the absence of caustic, it will be useful to *compress* the injured limb above the wound by means of a slightly bound cord, while with the fingers the liquids contained in the wound should be *expressed* from within outwards. This may be facilitated by continued washing with some liquid or other. If the bitten part is accessible by the mouth the injured person ought himself immediately to apply *suction ;* this is not dangerous provided the person who operates has no excoriation either on the lips or in the mouth.

The public ought to be on its guard against specifics recommended by charlatans as efficacious in prevention of rabies, for there is no actual preservative against rabies except deep and immediate cauterization of the poisoned wounds.

II. *Treatment of an animal just bitten by a dog either mad or suspected to be mad.*

Not only every mad or suspected dog ought to be immediately slaughtered but also every dog or cat bitten by a mad or suspected dog. In case of serious accidents or of death of a man the proprietor of tbe mad dog can be prosecuted, in addition to the claims for damages which may be brought against him by the family of the deceased. It is important to preserve the bodies of dogs and to have them brought to some veterinary school or to some veterinary practitioner as that autopsy may show whether the characteristic lesions of rabies exist.

III. *Distinctive characters of rabies in the dog at its various stages.*

1. Rabies is not characterised by an outbreak of rage during the first few days. On the contrary, it is apparently an entirely harmless disease; but, from the commencement, the saliva is virulent, it contains the germs of the disease, and the dog is then much more dangerous by the caresses of his tongue than by his bites, for he has no tendency to bite.

2. Next, the dog changes his humour; he becomes sad, sombre, and taciturn, seeks solitude, and retires into the darkest corners. But he is not able to remain long in one place, he is restless and disturbed, comes and goes, lies down and rises, rambles, sniffs the air, seems to be seeking something, and scratches in front of him with his paws. His movements, postures, and gestures, seem to indicate that he sees phantoms, for he bites the air, springs forward, and howls as though attacking real enemies.

3. His look is changed; it expresses sadness and something of ferocity.

4. But in that state the dog is not aggressive against men, his character is as before. He is docile and obedient to his master, at the sound of whose voice he still gives signs of pleasure, which causes him to resume his original expression.

5. Often, instead of aggressive tendencies, the reverse condition exists during the first period of rabies; the feelings of affection towards his master and the family of the house are exaggerated, and are expressed by the frequent movements of the tongue, with which he is eager to caress the hands and face.

6. The respect for his master, a feeling well developed and very firmly rooted in the dog, rules him sufficiently in most cases to make him, even during the paroxysm of madness,

remain under the control of his master to a great extent, even when the instinct of ferocity has commenced to show itself and the animal to yield entirely to it.

7. A mad dog does not dread water; he desires it eagerly. So long as he can drink he endeavoures to satisfy his always urgent thirst and when spasm of the throat prevents him from swallowing he plunges his muzzle entirely into the vessel and, so to speak, bites the liquid he cannot swallow. *A mad dog is not, then, hydrophobic, and hydrophobia is not a symptom of rabies in the dog.*

8. The mad dog does not refuse food in the early stages; he often feeds more voraciously than usual.

9. When the need of biting, which is one of the essential characters of rabies at a certain stage of its development, commences to show itself, the animal is at first satisfied with inert bodies. He gnaws the wood of doors and furniture, tears cloth, the carpets, trousers, &c. Crunches between his teeth straw, hay, horsehair, wool, &c., eats earth, dung of other animals and of himself, &c., and so accumulates in his stomach the remains of all materials he has gnawed.

10. Abundance of saliva is not a fixed symptom of rabies in the dog; sometimes the mouth is moist and sometimes dry. Before the stage of fury the saliva is regular; it increases during that stage, and diminishes afterwards.

11. The mad dog often expresses the painful sensation which spasm of his throat causes by placing his paws in front of and on each side of the cheeks, as a dog does when a bone has become fixed in his throat.

12. In a particular form of rabies, termed "dumb madness," the lower jaw, paralysed, remains separated from the upper, and the mouth remains dry and wide open, with a reddish-brown coloration of the membrane lining it.

13. In some cases a mad dog vomits blood.

14. The tone of the voice of a mad dog always changes, and he always barks in an unusual manner. It is hoarse, suppressed, and changes into a jerking howl. In "dumb madness" this important symptom is not manifested. The form receives its name from the absolute silence of the animal. Thus the two forms are "Raging" and "Silent."

15. Sensibility is much blunted in mad dogs. When one is struck, burned, or cut, he does not whine or cry, as other individuals of his species do, in expressing their sufferings or even their fears. Sometimes he inflicts serious wounds on himself with his teeth, and expends his rage on his own body without seeking to injure persons who are well known to him.

16. A mad dog is always violently impressed and irritated by the sight of an animal of his own species. As soon as he finds one present, or even when he hears a bark, a rabid fit occurs, if it has not yet done so, and if he is labouring under the mad fury it is increased, and he endeavours to bite the other animal. The presence of a dog produces the same impression on individuals of other species when they are suffering from rabies, so that we may say truly that a dog is a testing means by which we can almost always, with certainty, reveal rabies still concealed in an animal.

17. A mad dog often escapes from home when in the course of the malady fierce instincts begin to manifest themselves and to gain influence over him, and after one, two, or three days of wandering, during which he seeks to satiate his madness on all the living beings he meets, he often returns to die at his master's house.

18. When the furious stage has occurred it is characterised by the ferocious expression it gives to the animal affected, and by the desire to bite that he experiences whenever opportunity offers, but it is always against his fellows rather than other animals that he directs his attacks.

19. Mad fits show themselves in alternation with the intervals, when the animal exhausted falls into a state of comparative calm, which may deceive as to the nature of his disease.

20. Healthy dogs seem able to detect the rabid condition of an animal of their species, and, instead of fighting with him, seek to avoid his attacks by flight.

21. A loose mad dog, then, attacks energetically all living beings he meets, but always a dog rather than other animals, and man least readily of all. Then, when he is tired out by his fury and by his fights, he walks straight forwards with a vacillating pace, easily distinguishable by his hanging tail, head hung down, restless look, and gaping mouth, from which hangs his tongue, blue and covered with dust. In that state he is not very aggressive, but will bite men or animals which come within reach.

22. Death in rabies occurs by paralysis and asphyxia. The biting instinct persists to the last, and it is necessary to take care of him, even when exhaustion seems to have changed him into a lifeless body.

23. On examination after death we almost always find in the stomach a mixture of different substances, such as hay, straw, hair, wool, leather, &c., all which, by their presence and by their collection, either confirm or prove the existence of the rabid condition.

Such, gentlemen, are the instructions we have the honour to submit to the Committee."

So much for the question of Rabies and its prevention. We would especially draw the attention of our readers to the allusion to the formation of a committee on epizootics, another proof of advancement of the profession in Government estimation.

Any indication of surgical operations of value in the preservation of human life and in the prevention of human pain, having originated from members of our profession, are not only pleasing to us, but are valuable proofs of our public usefulness. We thank M. Bouley, therefore, for the following, which we find in his *Chronique* for 15th September.

"There was, in an immature condition, a grand surgical idea in the ingenious proceeding to which our colleague, M. Coculet, had recourse fifteen years ago in returning the everted womb of the cow. We know in what his method consisted; since the congested condition of the womb, resulting in increased volume of the organ, opposed its return by the passage through which it had passed out and its restoration to its original position, M. Coculet conceived the idea of subjecting it to methodical compression by means of a large linen bandage which was kept in a stretched condition by a sort of wooden rail of the size of a broomstick, by which means an equally distributed and gradually increasing pressure might be exercised upon the whole length of the hernial tumour. By this means the uterus became quickly *exsanguinified*, and its reduction not only possible but easy. Since then, a German surgeon, Esmarch, has resorted to methodical compression to remove the blood from organs which it had been found necessary to remove by amputation, and so to give the subject of the operation the benefit of the blood driven to the centre by compression, and of that which would inevitably have been lost during the operation, were not the parts almost devoid of blood. This, one of the most valuable of surgical methods, is different in its aim but similar in its means of performance to that of M. Coculet. However, a surgeon of the Hotel Dieu de Caen, M. Denis-Dumont, has just derived from Esmarch's method a process for reduction of herniæ in man very similar to M. Coculet's process. It is not, indeed, as a hæmostatic agent that the apparatus of Esmarch has been applied by M. Denis-Dumont, but as a means of compression methodically arranged to produce diminution in size and reduction of hernial tumours. In the two cases we shall reproduce the herniæ resisted reiterated attempts at reduction by taxis, but

at the first trial of Esmarch's apparatus they were reduced spontaneously and with great facility."

Then follow the two cases. Afterwards the remarks continue.

"The apparatus of which Esmarch recommends the application is not a simple cloth, such as M. Coculet used, but an elastic band, hence possessing an activity always in play, which causes it to adapt itself to the tumour in proportion as the latter diminishes in volume, and to *pursue* it, so to speak, until it is reduced to its smallest possible dimensions."

M. Bouley concludes his notice of this matter by suggesting this means in veterinary practice for ventral herniæ and for umbilical herniæ of colts.

The *Annales de Médecine Vétérinaire* contains two official papers concerning pleuro-pneumonia epizootica in the Netherlands. We see that inoculation is there considered as a prophylactic. From the same journal we obtain the following, which we believe will prove instructive in these days of inquiry concerning the value of animal vaccine.

Means of definite distinction of good Jennerian vaccine from altered vaccinal fluid, by Hermann Köhler (Vierteljahrss. f. Gericht., Med. u. œff. saint).—Professor Köhler, of the Provincial Institution of Vaccination at Halle, before using vaccine at his establishment, submits samples of it to chemical and microscopic tests.

He ascertains the reactions with litmus, turmeric, and acetate of lead.

A vaccine, slightly opaque in consequence of fine opalescent coagula which it holds in suspension, is preferable to perfectly transparent vaccine, which latter immediately fills the tubes in consequence of its excessive fluidity, due to hydræmia of the subject from which it was obtained. With this latter to ensure success it is necessary to introduce a large quantity of liquid into the punctures.

A transparent vaccine may contain not only fungi but even bacteria.

Milky and opaque lymph is always suspicious; it contains globules of pus, fungi, bacteria, or crystals.

It is never right to use yellow, thready lymph, which passes from the tubes with difficulty; in most favorable cases this is due to a desiccation of the liquid caused by defective closure of the tube, but it generally is an indication of complete decomposition of the vaccine, showing it has been kept for some years.

As for lymph contaminated with blood, Köhler abstains from using it because of its bad appearance, but he does not believe it would be capable of communicating any constitutional or infectious disease.

Good lymph should always have an alkaline reaction. The disappearance of this is related to the decomposition of the albuminoid substance and to the formation of hydrothionic and stearic acids.

Vaccine which contains fungi, bacteria, and crystals is, almost without exception, neutral.

Sometimes certain vaccines, perfectly good, give but a feeble alkaline or even a neutral reaction, and, on the other hand, purulent vaccine may be alkaline. The reaction of vaccine is, then, in itself not a proof of purity, and it is not right to dispense with microscopical examination. But lymph which blackens acetate of lead papers ought to be promptly rejected.

The normal morphological elements of vaccine are as follows:

1. A fundamental mass, granular or spotted, of an albuminoid nature, called by Köhler "*Stroma*."

2. Small granules in greater or less abundance.

As for the colourless corpuscles, which Chauveau gives as a third element, Köhler considers them but the white corpuscles of the blood or lymph undergoing decomposition. The granules are least numerous in vaccinal lymph, poor in stroma. Whilst impregnating the fundamental albuminoid substance, they adhere together and form coagula, which give to good vaccine its opalescent appearance.

The heterogeneous elements of vaccine may be grouped in three categories:

1. Elements which do not alter the qualities of vaccine by their presence—red and white blood-corpuscles, fibrinous clots, pavement epithelial cells, grains of starch (when the clothes have been much starched).

2. Elements which are inoffensive in themselves and do not interfere with the regular development of the vaccinal pustules, but whose presence is a sign of more or less advanced decomposition of the vaccine—filaments and spores of fungi, crystals of various kinds, and fatty drops.

3. Elements capable of conveying infection and whose mere presence should cause rejection of the vaccine which contains them—pus-globules, bacteria round in form, freely moving, and united in rows of from two to five (*streptococcus*). White globules undergo change much more rapidly than the red in vaccine.

Aspergillus, penicillium, mucedones of various kinds, described by Hallier, in old and wasted vaccine, are foreign matters; various forms of crystals are, on the contrary, the only morphological elements characteristic of old and tainted vaccine. They commence to show themselves from the time when the amorphous albuminous stroma commences to decompose. Köhler distinguishes various forms—(α) *tabular* of two kinds, (1) rhombic crystals of cholesterine; (2) hexagonal crystals he has met twice, but is not assured of their nature; they are insoluble in alcohol and in ether.

(β) *Acicular*, which are (1) soluble in alcohol and ether; some of them assume a purple colour under the action of sulphuric acid (cholesterine); others do not (stearic acid). (1) Insoluble in alcohol and ether, among which are comprised small yellowish conglomerated crystals (leucine), and bundles arranged longitudinally, formed by the union of many crystals (tyrosine). Also less numerous, long and thick, irregularly arranged crystals of mineral origin (ammonia hydrochlorate or calcic sulphate).

(γ) *Columnar* crystals, similar to those of triple phosphate in urine. Always few in number and calcareous.—*Revue des Scien. Méd. en France et a l'Etranger.*

In the *Annales* also we see two useful histological articles; one of these is on the structure of the choroid coat of the eye, which is found to be different in ruminants from carnivora. In the former the tapetum lucidum is due to a special amorphous layer, and a layer of laminar fibres; in the latter solely of a layer of cells, which the author terms "Iridocytes."

We shall finish this paper with the other anatomical notice

On a new place of origin of the nerves of vision, by J. Stilling, from the *Revue Internationale des Sciences*.—"From a very detailed course of work on the central termination of the nerves of vision I here shall give only the interesting facts. It has been considered hitherto that the roots of the tractus opticus are not in communication with the crus cerebri; this is not correct, for one large portion of these roots of the optic nerve comes from a large nucleus situated in the cerebral peduncle, which can be seen only when the grey substance has been completely removed, so that there no longer remains a trace of that substance on the cupola of the peduncle.

"The nucleus presents on horizontal and on vertical section the form of an almond; hence it will be useful to designate it the 'nucleus amygdaliformis,' the nerve root-threads of

the tractus opticus, which run into this nucleus form an arc with their original direction before entering.

"The situation, volume, &c., of the nucleus would lead us to suppose that we ought to surmise it to be a ganglion of which stimulation produces reflex action."

THE PRINCIPLES OF BOTANY.

By Professor James Buckman, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 649.)

THE UMBELLALES.

The Umbellal Alliance is one of the most useful and interesting of all the larger groups of plants, and is thus diagnosed:—*Epigynous Exogens with dichlamydeous, polypetalous flowers, solitary large seeds, and small embryo lying in a large quantity of albumen.*

Professor Lindley has the following notes upon the alliance:—

"The combination of a polypetalous corolla, an inferior fruit, and solitary seeds, chiefly consisting of albumen, constitute the distinctive character of this alliance, whose orders can by no means be separated, whatever mode of general distribution a botanist may employ.

"In fact, umbellifers differ from ivyworts in nothing except their peculiar epigynous disk and didymous fruit.

"Ivyworts are hardly distinguishable from cornels, if we neglect the opposite leaves and tetramerous flowers of the latter; and from witch hazels there is little to separate cornels, except the valvate corolla and exsitipulate leaves of the latter; finally, bruniads rely for their definition more upon their want of stipules and anthers turned outwards than on anything else.

"If we look to the affinities of this alliance we shall again have an instance of a most natural group, being so touched at all points of its circumference that it may be almost regarded as a peculiar centre of organisation, from which many other groups diverge.

"Thus, in a direct line, umbellifers closing in upon crowfoots, and stretching towards saxifrages, ivyworts almost invading the territory of vineworts and caprifoils, cornels owing their position as a distinct order, rather than as a mere group of garryads or alanqiads (?), chiefly to their uni-

sexual dichlamydeous flowers, on the one hand, and their valvate corolla on the other."*

That so large an order as the Apiaceæ or Umbillifers should have wide alliances is not to be wondered at when we consider the wide differences which these present, as may be seen by comparing any of the numerous wild species of the order, had we before us the different species (1500) of the 267 genera of Apiaceæ alone.

The alliance is divided into five natural orders, three of which we arrange as follows:

1. ARALIACEÆ — IVYWORTS. — *Fruit not didymous, without a double epigynous disk, three or more celled; pentamerous flowers; corolla valvate; leaves alternate, without stipules.*

2. CORNACEÆ—CORNELS.—*Fruit not didymous, without a double epigynous disk, two or more celled; tetramerous flowers; leaves opposite.*

3. APIACEÆ—UMBILLIFERS.—*Fruit didymous,* with a double epigynous disk.

1. IVYWORTS are well represented by the magnificent climbing shrub everywhere known as ivy. They form but a small natural order of 21 genera, including 120 species. The ivy itself makes up in its varieties for the small number of its species, for not only have we various forms of leaves to the same plant, all of which differ in size, but the difference between young and old plants is so considerable as to have given rise to innumerable specific names, which do not hold good on more systematic inquiry. A young plant with its lobed leaves is so distinct from the upper leaves of an old that few botanists, seeing the two at distant points and for the first time, would imagine them to be but different forms of a single species.

The gardener has taken advantage of these variations to produce an infinitude of varieties, in which the form, colour, size, and other particulars are multiplied to an extraordinary extent.

Ivy was formerly used in medicine, but of late years its use has been almost entirely discarded. Like its allies, the Umbelliferæ, the whole plant is more or less stimulant and aromatic, but it does not seem to contain the poisonous principles which form so distinguishing a character in many of the umbellifers.

The berries are emetic, and we take it that the whole plant, in the shape of decoction, would be sufficiently nauseous to cause sickness. That the plant is innocuous may be gathered from the fact that both horses and sheep will occa-

* 'Vegetable Kingdom,' p. 772.

sionally feed upon it most greedily. The following facts are by Mrs. Lankester, which are copied for their great interest:

"Many virtues were attributed by our forefathers to ivy. Its fruit was regarded as a specific for the plague and similar disorders, for which it was infused in vinegar.

"The whole plant is aromatic, and a very fragrant resin exudes from the old stems when bruised, from which is obtained the chemical principle hederine. Ivy was at one time included in the British Materia Medica, as it was in that of the Greeks, and still is in that of India. The berries are emetic and purgative, and the resin, which is still used in India, is aperient and restorative. It has been used for toothache with success.

"The leaves have a very unpleasant taste; taken inwardly they act as aperient and emetic, but are likewise soporific. In Germany, according to Haller, they are given to children when suffering from atrophy. The juice is said to cure headache when applied to the nostrils. A decoction of the leaves has been used for dyeing black.

"The wood, when it attains a sufficient size, is employed by turners in the south of Europe; but it is seldom used here for any purpose but that of whetting the knives of leather cutters. It is very porous. The ancients supposed that it had the property of separating wine from water by filtration, an error arising from the wood absorbing the colour of the liquid in its passage through the pores. On the Continent, at the present time, it is sometimes used in thin slices as a filter.

"The ivy is sometimes eaten by sheep and horses, but it is not a favourite food. In the 'Winter's Tale' we read of the shepherd who found Perdita, being led to the sea-side in the hope of finding two of his sheep which had strayed 'browsing on ivy.' After all, the charm of the ivy consists in its unrivalled pertinacity of growth, its rich colour, and its associations with much that is interesting in history.

"From the days of Pliny it has formed a favourite embellishment of dwelling-houses. In a letter to Apollinaris, the Consul, describing his principal seat in Tuscany, represents the trunks of his plum-trees to be entwined with it, and extending so as to connect them together. Hasselquest says that about Smyrna it forms hedges and ornaments to every garden. These classical associations may add somewhat to the interest with which we regard our old ivy-grown buildings, but they cannot add to the delight which every lover of nature must feel in contemplating the picturesque beauty

with which it clothes every object to which it attaches itself, be it a rugged cliff, a ruined wall, or the dying trunk of an old tree of the forest. Although we now constantly introduce ivy into our church decorations at Christmas, there was an old prejudice against it, which is alluded to in some of the old carols."*

As an interesting plant we know of none which has a greater claim upon our attention and regard. Scarcely an old ruin or a large tree but is beautified by the presence of ivy. With regard to its clinging to trees, Shakespeare and others have fallen into the error of considering and describing it as a parasite.

> "The ivy which had hid my princely trunk,
> And sucked the verdure out on't,"

conveys an erroneous notion, inasmuch as the suckers of the plant only act as climbers; it has its own root attachment to the soil. Still, ivy may often be injurious to a growing tree, as its twisted arms may constrict the bole and larger branches, rendering proper development difficult, and often impossible; from these, then, it should be removed by dividing its stem, when it will be seen that the enemy soon dies, as it gets no pabulum from the tree around which it clings.

Much has been eloquently written about the associations of ivy with ruins and old buildings. Some suppose that this plant hastens the decay of these by keeping the walls damp, but our own experience goes to show that a well-covered ivy wall is never damp, and we think that it is really one of the best preventives of damp that we possess, even for our modern house, while the ruin has been kept from decay, and so been preserved by its friendly intervention, in a manner which would be impossible without it.

> Ivy, ever verdant ivy, when thou crown'st the battle tower,
> Still thy look is glorious:
> From ruins grey take thee away, away goes all enchantment's power,
> And age is then victorious.

The pretty little *Adoxa moschatellina* is placed by Lindley in the same order. It is a common plant to our banks and hedgerows, and is recommended to us by its peculiar musk-like perfume. It is the only species of the genus, and is by Bentham, Syme, and others, placed with the Caprifoils.

2. The Cornels are represented by our native shrub known as *Cornus sanguinea, Dogwood, Prickwood, Spearwood,* and *Skewerwood,* from the fact that skewers are not

* 'English Botany,' vol. iv, p. 184-5.

unfrequently made from its wood. The specific name of *sanguinea* given to the common hedgerow species is due to the beautiful red colour assumed by the leaves towards autumn. Some of the American species are still more remarkable for the bright colour of their foliage.

Besides the use of the wood for skewers it is sometimes employed for the more refined sorts of gunpowder.

The fruits yield a fine oil which is much used in France in the manufacture of refined soaps. We, however, have not met with any instance of its extraction in this country, although these berries are said to yield as much as 34 per cent. of oil.

The elegant species known as *C. Suecica,* dwarf cornel, is not uncommon in the north of England and the Scottish Highlands. It is said that "the berries of this pretty little plant are eaten by the Highlanders to improve their appetite, and hence are called *Lus à chraois,* or plant of gluttony. In the Arctic regions bears fatten on these berries, whence they are called the *Crees musquamana.*"

The barks of several of the exotic species are extolled as febrifuge. The *C. sericea, circinata,* and *Florida,* of the States are said to yield a bark equal to the Peruvian barks in intermittents, but from what we know of the family we cannot but think that these virtues have been exaggerated.

REMARKS ON A CASE OF GID AFFECTING AN OX.

By F. W. Day, M.R.C.V.S., Tewkesbury.

The following interesting communication addressed to Professor Cobbold is dated October 12th. It was accompanied by a characteristic example of *Cœnurus cerebralis:*

Dear Sir,—Some few days ago I was requested to see a *two-year old ox,* the property of Mr. Hyatt of Oxenton, a village about five miles from this town. The man bringing the news that the animal turned continually round and round until it got into a pond or ditch, where it remained until it was assisted out, with the head turned to one side, and when left to itself, would soon be in the same predicament again. I started, but prior to my arrival there, the owner had it put into a loose stall, where I found him rambling round just as the man had described. He occa-

sionally stopped to take food and water. I made inquiries how long he had been affected, and if he had been injured about the head, but I found he had not been hurt in any way; the herdsman told me he had noticed him look queer for nine or ten days. I caught him and examined the head, but could not detect anything abnormal. I loosed him again and attempted to make him walk in a straight line but could not. I then told my client I was of opinion the animal was suffering from gid, analogous to that which so often affects sheep, with which he was well acquainted. I told him to feed him well with as much chaff, flour, and pulped roots as he would eat, and I would call and see him again in a few days, but I did not believe he would either fatten or recover, though he appeared healthy in every other respect. I accordingly saw him again at the end of five days when I found he was much worse. I then told my client I thought it would be best to destroy the animal, and asked him to give me the head when he did so, and further requested him to have the ox destroyed without using the poll-axe or other means which would be likely to injure the cranium or its contents; so he had the animal made fast by the head and the carotid arteries and jugular veins severed at once.

He sent me the head, which I examined, and found just over the left lobe of the cerebrum a little prominence which I could not detect prior to removing the skin. I manipulated it and found it yielded considerably to pressure, and on applying more pressure, the frontal bone gave way and a little serous fluid escaped, which strengthened my idea that my diagnosis was a correct one. I immediately proceeded to make the necessary sections to remove the brain, and on doing this, I found the left lobe of the cerebrum much enlarged, and clots of coagulated blood between the convolutions, and on further examination I found in the lateral ventricle an hydatid as large as a pigeon's egg, and adherent to it hundreds of heads larger than any I ever saw before, some of which I enclose in a small phial and forward you per post. The brain substance forming the roof of the ventricle was considerably absorbed, and the cavity three times its natural size, in fact, so much was absorbed that it (the cyst) came in close apposition with the bone, there appearing to be only the meninges intervening between it and the wall of the hydatid; the bone was also considerably thinned over the part. I shall very carefully preserve the side of the brain which contained the hydatid in hopes of showing it you some day. I think there can be no doubt but that it was a true case of gid, and the numerous heads which are

adherent to the cyst, those which would be the *Tænia cænurus* of the dog. However, should I be wrong in my opinion, I shall be pleased to stand corrected by you; if I am right, and you think the case worthy of notice, I should be pleased to see it published.

I think this is an interesting case for those who are fond of the study of Helminthology. The heads of the parasite are well developed. I have given a dog the other part of the brain and a few of the heads and shall watch the effects.

I shall be pleased to send you further particulars respecting the symptoms or any other information you may require.

REMARKS ON "FIRING."

By C. Gresswell, M.R.C.V.S., Nottingham.

Surely, in these days, there is sufficient outcry of cruelty to animals, without men in our own profession joining in it for the purpose of getting rid of what must be in the opinion of many veterinary surgeons a very favourite and effectual remedy. I allude to the use of the actual cautery. Interference with the advancement of science by the curtailment of judicious vivisection has surely been enough warning to us of late that the public, now suffering from an attack of fanatical sympathy with cruelty to animals, will at the first opportunity endeavour to interfere with our rights of operating as scientific men. It is, therefore, incumbent upon us not to commence the crusade or give publicity to any of our deeds of so-called cruelty, for it must be borne in mind that, whatever individual members may think of firing, it is undoubtedly highly esteemed (and rightly so, in my opinion) by a great proportion of the profession. If the evidence of the first scientists of the day could not control the public mania against interference with judicious vivisection, how could we possibly hope to control the tide when once it had set in against our use of the actual cautery? In vain it would be for us to set forth its utility if members of the profession were found to cry it down. In vain it would be to prove that but slight pain need be attendant upon it, and that pain is entirely counteracted by the freedom thus caused from other sugering. We should be treated as other scientific men have lately been. Far better, in my opinion, it would be on this point to stand firm, or else there will be no end to the encroachments some persons will attempt in their perverted zeal.

In last month's number of the *Veterinarian* I read that Mr. Dyer seems peculiarly unobservant of the fact that, with some veterinary surgeons, the operation of firing is always carried out with little or no pain at all. For the last twenty years my father has very rarely fired a horse except under the influence of chloroform, and I myself have never performed the operation without. An application after the firing is over, to exclude the atmosphere, will prevent any but the least amount of pain during the whole course of recovery. Mr. Dyer also states that by firing we often deprive the owner of the valuable services of his animal. This is no doubt true in some cases, but in the majority it is very far from being so, as the greater number of horses, fit subjects for firing, are hunters at the end of the season, and racehorses so broken down that it would be impossible to gallop them in less than two or three months under any circumstances. Horses accustomed to slow work far more rarely require the application of the actual cautery.

VETERINARY SURGERY AS PERFORMED BY UNSKILLED MEN.

By R. H. Dyer, M.R.C.V.S., Limerick.

In my communication upon the above subject, which appeared in the August number of your Journal, I stated that I had removed a portion of a "scirrhous cord" from a colt which had been castrated by a countryman a fortnight prior to my seeing him. I need scarcely say that I use the term "scirrhous cord" in its ordinary acceptation; induration associated with sprouting granulations would doubtless be more correct. This I stated as a fact. Since that time a similar case has been operated upon by me, and the number of days elapsing when the disease was noticed was even less than in the first quoted case.

When a man states a fact, it does appear singular that another should believe it to be impossible!

In this note I am only anxious to make known to your readers that I am not in the habit of testing any one's gullibility by placing upon paper a falsehood. The very flattering and complimentary remarks made by your correspondent, Mr. Macgillivray, shall rest as they are.

THE CATTLE DISEASE AT OUGHTIBRIDGE.

[We give insertion to the following letter from Mr. Cartledge, F.R.C.V.S., Sheffield, as an account of this destructive disease appeared in our last issue.]

"To the Editor,—My object in writing this letter is to allay, in some measure, the alarm which is felt in Oughtibridge and the neighbourhood by the deaths of four head of cattle belonging to Mr. Mills.

"The reports which appear in to-day's papers very fairly represent the state of the case, although not calculated to lessen the excitement.

"The part I have myself had in this matter is that of veterinary adviser to the West Riding, Mr. Supt. Gill, of that constabulary force, watching vigilantly all outbreaks of cattle disease. I have, with others, made *post-mortem* examinations of two of the animals which have died, Mr. Fletcher being the professional man in attendance. I believe he has done all that could be expected under the circumstances. What I am anxious to do is to remove the impression that rabies was necessarily the cause of death. No good could possibly be done by such a report, even if this were an established fact, and much alarm must necessarily follow any such belief after the statement that a dog, supposed to have been rabid, had bitten two persons in the locality.

"Firstly, there is no *proof* that the dog alluded to was the subject of rabies; and, secondly, there is no *proof* that he had bitten any of the cattle which have died.

"I may here state that not one dog in ten said to be rabid is so affected. The cry of "mad dog!" is too common, and every poor cur, the subject of the cry, is mercilessly pursued, until naturally enough, he resists ill treatment, and attempts to bite his enemies in self-defence.

"Rabies in other animals than the dog is more rare, and neither the symptoms exhibited by the animals at Oughtibridge when living, nor the appearances after death, agree with cases on record.

"The fact that the butcher who assisted at the *post-mortem* on Monday is suffering from swelling of the arm in consequence of inoculation in no way favours the impression that rabies was the cause of death. Poisonous matter of any kind would have led to the same result.

"Yours faithfully,

"B. Cartledge, F.R.C.V.S.

"Sheffield, September 7th, 1878."

Pathological Contributions.

CATTLE PLAGUE.

This disease continues to exist to some considerable extent in Russia, and has extended to the following provinces in Austria-Hungary, namely, in five villages in the district of Macarsca, in Dalmatia; in one village of the district of Stryj, in Galicia; and at Schellenberg in Hungary; and in Jahovo, in the Military Frontier.

The disease also exists in different localities in Turkey in Europe; and in the kingdom of Greece at Eubœa.

PLEURO-PNEUMONIA.

This disease continues in the Netherlands, and during the four weeks from the 8th of September to the 5th of October, fifty cases were reported in eleven districts.

FOOT-AND-MOUTH DISEASE.

A report from Russia during September, states that this disease has prevailed in the town of Berdiansk, and that about 1800 milch cows died from the effects of the disease.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

Return of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of September, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise;—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . .	Foot-and-mouth	2	64	...	...	66	Slaughtered under the instructions of the Privy Council.	392	8442	...	428	9262	Slaughtered under the instructions of the Privy Council.
Antwerp .	„ . .	Sheep-scab .	...	20	...	...	20	Ditto	...	501	...	...	501	Ditto
Hamburg .	Hartlepool .	Foot-and-mouth	...	1	...	...	1	Ditto	...	131	...	...	131	Ditto
„ . .	London . .	Sheep-scab .	...	7	...	...	7	Ditto	...	313	...	...	313	Ditto
Harlingen .	„ . .	Foot-and-mouth	...	6	...	...	6	Ditto	152	1341	...	402	1895	Ditto
Rotterdam .	„ . .	„	6	101	...	30	137	Ditto	1047	10901	...	2146	14094	Ditto
Tonning . .	„ . .	„	...	1	...	...	1	Ditto	330	959	...	...	1289	Ditto
Total Diseased Animals .		Foot-and-mouth	8	173	...	30	211	Total Healthy Animals .	1921	22588	...	2976	27485	
		Sheep-scab .	...	27	...	...	27							
		Total . .	8	200	...	30	238							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of September, 1878.

Veterinary Department, Privy Council Office,
October 10th, 1878.

Return of Foot-and-Mouth Disease for Week ended Oct. 5, 1878.

—	Farms or other Places.			Animals Attacked.		Diseased Animals.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Animals Attacked.
ENGLAND.											
County.											
Dorset	1	...	1	4	...	...	...	1	3	...	...
Hants	...	1	1	...	95	...	1	...	94	...	...
Kent (ex. Metropolis) . .	1	...	1	66	...	21	...	...	45	...	...
Lancaster	...	1	1	...	1	...	...	...	1	...	...
Lincoln, parts of Kesteven .	1	...	1	157	...	...	...	...	157	...	...
Northumberland . . .	...	2	2	...	15	...	...	...	15	...	...
Oxford	1	...	1	12	...	...	...	...	12	...	...
Liberty of the Isle of Ely . .	1	...	1	1	...	...	...	...	1	...	...
The Metropolis (Port of London)	...	2	2	...	* 9	* 9	...	...	...	...	...
SCOTLAND.											
County.											
Dumfries	1	...	1	12	...	...	...	3	9	...	...
Total	6	6	12	252	120	30	1	4	337	...	...

* These were foreign animals, landed at the Port of London.

Pleuro-Pneumonia for Week ended Oct. 5, 1878.

—	Farms and other Places.			Animals Attacked.		Diseased Animals.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Animals Attacked.
ENGLAND.											
County.											
Cambridge (ex. Liberty of the Isle of Ely).	1	...	1	...	...	...	...	...	...	...	...
Chester	1	1	2	...	2	2	...	...	...	...	...
Cumberland	3	...	3	...	...	...	...	...	...	...	...
Derby	4	...	4	2	1	3	...	...	...	1	1
Essex	8	4	12	...	6	6	...	...	...	...	...
Huntingdon	1	...	1	...	...	...	...	...	...	...	...
Kent (ex. Metropolis) . .	1	2	3	...	3	3	...	...	...	...	...
Lancaster	8	...	8	...	5	5	...	...	...	...	...
Leicester	5	...	5	...	...	...	...	...	...	...	...
Middlesex (ex. Metropolis) .	3	...	3	...	2	2	...	...	...	...	...
Norfolk	6	1	7	3	12	14	1	...	...	1	1
Northampton (ex. Soke of Peterborough).	5	1	6	...	1	1	...	...	...	...	...
Northumberland . . .	...	...	...	...	...	...	...	...	...	...	2
Notts	1	1	2	...	2	2	...	...	...	...	...

Pleuro-Pneumonia for Week ended Oct. 5, 1878 (continued).

	Farms and other Places.			Animals Attacked.		Diseased Animals.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Animals Attacked.
ENGLAND.											
COUNTY (*continued*).											
Rutland	1	...	1	...	...	...	...	...	...	...	...
Salop	1	1	2	...	1	1	...	...	...	...	...
Stafford	3	...	3	2	1	3	...	...	...	1	1
Suffolk	5	2	7	...	3	3	...	...	...	...	...
Warwick	2	...	2	...	1	1	...	...	...	...	...
Wilts	...	1	1	...	4	...	1	...	3	...	...
Worcester	8	1	9	...	1	1	...	...	...	...	...
York, East Riding	1	...	1	...	1	1	...	...	...	...	...
„ North Riding	...	2	2	...	3	3	...	...	...	...	...
„ West Riding	2	9	11	1	11	9	...	...	3	...	...
Liberty of the Isle of Ely	1	...	1	...	...	...	...	...	...	...	...
The Metropolis	9	3	12	...	13	13	...	...	...	1	1
WALES.											
COUNTY.											
Glamorgan	1	...	1	...	...	...	...	...	...	...	...

Pleuro-Pneumonia for Week ended Oct. 5, 1878 (continued).

—	Farms and other Places.			Animals Attacked.		Diseased Animals.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Animals Attacked.
SCOTLAND. COUNTY.											
Aberdeen	1	1	2	...	3	...	...	...	3	...	...
Argyll	1	...	1	...	...	...	...	...	...	...	...
Edinburgh	2	2	4	...	10	9	...	...	1	...	...
Fife	4	3	7	...	6	6	...	...	...	...	...
Forfar	5	2	7	1	7	8	...	...	...	1	1
Kincardine	1	...	1	...	2	2	...	...	...	...	...
Kinross	2	1	3	1	1	2	...	...	...	1	1
Perth	4	...	4	...	1	1	...	...	...	...	...
Renfrew	1	1	2	...	1	1	...	...	...	...	...
Roxburgh	2	...	2	...	1	1	...	...	...	...	...
Selkirk	...	1	1	...	1	1	...	...	...	...	...
Stirling	2	...	2	...	...	...	...	...	...	...	...
Wigtown	1	...	1	...	...	...	...	...	...	...	...
TOTAL	107	40	147	10	106	104	2	...	10	6	8

Facts and Observations.

Loss of Cattle in Transit from America.—The S.S. *Colina*, one of Messrs. Donaldson's Montreal Liners, which arrived at the Tail of the Bank of the Clyde on Saturday, Oct. 12th, lost on the passage across the Atlantic a *hundred and sixty head of cattle*, representing a money loss of about £3000. The *Colina* encountered heavy gales and was a few days behind time, having been hove-to in consequence of an accident to her machinery.

The Steamship *Iris*, Captain Taunton, bound from New York to Antwerp, put into Falmouth, Oct. 16th, for coals. The captain reported that during the whole passage terrible gales had been experienced, and that on October 8th, *seventy-one oxen* which were on deck were smashed up and swept overboard, and *thirteen horses* in the hold were, at the same time, suffocated, in consequence of the master being obliged, for the safety of the ship, to batten the hatches down.

Disease among Horses in Australia.—The *Age*, Melbourne, Aug. 6th, says, that it is reported that the horse disease has again made its appearance amongst thorough-bred stock in the colony, and has proved fatal to two colts and one filly.

Disease among Poultry in Germany.—A mysterious disease has broken out amongst poultry in Leipsic. The birds are attacked suddenly, and in many cases fatal consequences ensue within a few hours. The disease does not appear to be confined to one single district, for fowls in yards many miles apart have been attacked with similar symptoms, and with equally fatal results.—*Live Stock Journal.*

Importation of Texas Cattle.—It is reported that the *Great Eastern* Steamship, which has been lying idle for so long, is to be fitted out at Milford Haven as a cattle boat, to run between Texas and London. It is calculated she will carry 2200 head of cattle and 3600 head of sheep.—*Ibid.*

Castor-oil Beans are now grown as a crop in the United States. In one western county alone 2773 acres were laid down in it last year, the average crop being 12 to 15 bushels per acre. A bushel of good seed is said to yield there about $2\frac{1}{4}$ gallons of oil.

THE VETERINARIAN, NOVEMBER 1, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

VETERINARY INSPECTORS UNDER THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

IMMEDIATELY after the passing of the Cattle Diseases Bill, we referred to what we considered to be an unfortunate amendment of Section 5, Subsection 11, which originally read as follows:—"Veterinary inspector means an inspector being a member of the Royal College of Veterinary Surgeons." An attempt was made while the Bill was in committee to add the words, "Or a holder of the Highland and Agricultural Society's veterinary certificate." The attempt was, however, resisted, and in division the motion was negatived by a small majority. Subsequently, when the debate on the Bill was resumed, after a long evening had been occupied in the discussion of matters connected with the all-absorbing Eastern question, the clause was extended by the addition of the words, "Or any veterinary practitioner qualified as approved by the Privy Council."

When the amended clause appeared, we foresaw that the alteration would give rise to considerable difficulty. Probably, as it was said at the time, the proposer and supporters of the amendment had only in view the admission of the holders of the Highland and Agricultural Society's certificate, in addition to members of the College, but the words were so arranged as to give the Privy Council power to admit any veterinary practitioner whom the Local Authorities chose to appoint. We were not, therefore, surprised to learn from our correspondents and from printed lists of officers which were issued by Local Authorities, that among the veterinary inspectors appointed there were many persons who were not members of the Royal College of Veterinary Surgeons. The attention of the authorities was called to this circumstance, and the invariable reply was that there were not

a sufficient number of veterinary surgeons within a reasonable distance to furnish the required list of Inspectors, and that it was absolutely necessary to appoint a certain number of uncertificated men to make up the deficiency. In several instances it was urged that there were no members of the College within various distances, from twelve to thirty miles, and the Privy Council were requested to consult the convenience of the Local Authorities by accepting the qualifications which they deemed to be sufficient.

In accordance with the representations of the authorities, the Lords of the Council passed the following order:

"The Lords and others of Her Majesty's Most Honorable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order and declare, and it is hereby ordered and declared, as follows:

"The following is hereby approved as the qualification of a veterinary practitioner, not being a member of the Royal College of Veterinary Surgeons or in Scotland a holder of the Highland and Agricultural Society's Certificate, to be a veterinary inspector of a Local Authority in Great Britain, namely, that he shall have been employed by that Local Authority as an inspector or veterinary adviser under the Contagious Diseases (Animals) Act, 1869."

An explanatory circular has been addressed to the Local Authorities in connection with the Order pointing out that the duties of a veterinary inspector under the Act of 1878 are of such a character as to require professional knowledge, but that as it has been represented to the Privy Council that in some districts difficulty is at present found in obtaining a properly qualified person to act as veterinary inspector their Lordships have, as a provisional arrangement, issued the Order of Council above referred to, but it is clearly intended that, whenever practicable, a veterinary inspector should be a member of the Royal College of Veterinary Surgeons, or in Scotland that he should at least possess the Highland Society's Certificate as provided by section 7 B of the Act.

It appears from some letters which we have received, that

the Local Authorities have appointed veterinary practitioners in districts where the services of members of the College were available at the time. It must be evident in all such cases that the spirit of the Order has been infringed, although the powers which it confers may not have been exceeded. We do not expect that the members of the profession will approve of the course which has been adopted; but it should be remembered that the amendment of the original clause 5 of the Bill, amounted to a clear instruction to the Privy Council to do something in the direction of accepting a qualification for veterinary inspectors, other than that of membership of the Royal College of Veterinary Surgeons, a step on the part of the House of Commons which is much to be regretted.

ASSISTANT INSPECTORSHIP—VETERINARY DEPARTMENT.

Mr. W. Duguid, *late* of the Brown Institution, has been appointed Assistant Inspector in the Veterinary Department of the Privy Council Office.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Anatomical Outlines of the Horse. By J. A. McBride, M.D., M.R.C.V.S. Second edition, revised and enlarged, by T. Walton Mayer, Fellow and Member of the Board of Examiners R.C.V.S., and Veterinary Professor at the Agricultural College, Cirencester.

For some time we have been accustomed to respect a small work which we considered gave the rudiments of the Anatomy of the Horse in a manner at once simple and accurate. We viewed this work by Professor McBride as one useful not only to the agricultural student, but to place in the hands of the veterinary novice, for we were convinced that after a careful study of it he would have little to unlearn when he commenced more serious anatomical labours. With a basis of knowledge of the structure of the horse thus ac-

quired we found that a more general and comprehensive grasp of the minutiæ of anatomy and of the grand principles which regulate organization resulted from after study. The work, too, seemed to us adapted to the requirements of the agricultural student, for it treated its matter in a style at once lively and not too exacting on the patience of a reader viewing it as an entirely subordinate subject.

With not a little curiosity we proceeded to examine the modifications which have seemed to Professor Mayer to be necessary. He tells us in the preface "the professional student of veterinary anatomy will find the work of great utility in the dissecting room." We find the sections on articulations and muscles somewhat ample, and, with the exception of some important relations of muscles, fairly accurate. Much useful information may be also obtained from the description of the circulating apparatus, but we should like to have seen the nutrient arteries of the humerus and of the femur mentioned. The account of the nervous system is clear; we notice, however, that the old system of enumeration of the nerves given off from the base of the brain is retained; thus the seventh pair is said to consist of both *portiones dura et mollis*, whilst the pneumogastric is the eighth, and has a branch, the glosso-pharyngeal, and another, the spinal accessory!

This arrangement, indeed, is sanctioned by custom, but in the present day, when physiology and embryology are making such rapid strides, we should hesitate before relying upon conditions as found in the adult as a basis for the classification of structures.

With regard to the other portions of the work in our opinion the osteology is scanty; thus, for example, we miss the description of the remarkable grooves at the antero-superior part of the humerus, through which the tendon of flexor brachii plays, as also the relations of os hyoides to the thyroid cartilage. However, viewing the work as a whole, we cordially welcome it as a useful addition to veterinary anatomical literature. We believe it will be of advantage to many, and find a way into the student's library. The plates are good and will assist the memory very materially; the glossary is a decided recommendation.

We congratulate Professor Mayer on the satisfactory completion of the task he has undertaken, and we congratulate students of veterinary anatomy on this addition to their sources of information.

Extracts from British and Foreign Journals.

TRANSIT OF IRISH CATTLE.

Professor Fergusson of the Irish Privy Council Veterinary Department has presented a report to the Duke of Marlborough, Lord-Lieutenant of Ireland, respecting the transit of animals from Ireland to the ports of Great Britain, and into the provisions made for their reception at the ports of their arrival. Professor Fergusson finds that the "animals exported from Ireland are very seldom bred by their exporters, and often, before exportation, pass through several hands, from those of the breeders to those of their final purchasers, for exportation to Great Britain. The changes of ownership are more frequent in respect to cattle than with respect to sheep and swine. With each change of ownership there is generally a change of locality, and the movement entailed thereby, as well as the exposure in public fairs and markets, and on lands or premises used for temporary resting-places for animals in transit, subject them, more or less, to the influence of diseases of a contagious or infectious nature, particularly foot-and-mouth distemper, when that malady is prevalent."

Some extensive landowners in Ireland carry on a very large and lucrative trade by collecting from different fairs, or markets, or other places selected, young animals of size and promise, keeping them for a sufficient time, then sorting them into even "lots" and disposing of them at fairs, either for export, as advanced stores, for stall-feeding or other finishing, or to home buyers for the same purpose. These animals are frequently sent to England for dairy purposes, and many of the Dublin dairymen are extensive dealers, particularly for exportation. Sheep, again, "are kept much longer in the hands of their breeders than either cattle or swine, and are bred and fed together in much larger numbers than any other kind of agricultural live stock."

Regarding the mode of shipment, the Professor reports that in some instances when pressed for time and space, shippers put "large cattle along with other kinds of live stock in the same waggon, with the result of the smaller animals being often trampled on, and seriously and sometimes fatally injured. The manner in which animals purchased for immediate exportation are moved to the ports of embarkation depends very much on their kind, the state of the weather, the distance to be travelled, and the time allowed for the journey. If great expedition is required, and a railway available, that mode of transit is selected, no

matter what may be the kind of animal; but it often happens that the animals have to be driven long distances before a railway station can be reached, and they are exposed to great vicissitudes during their journey on foot.

It has also been ascertained that on the north coast of Ireland cattle-carrying vessels stop in their course, "lie to," as near as they can do with safety, and receive animals on board from row-boats, for the purpose of conveying them to the port of their debarkation in Great Britain. It frequently happens, too, that animals are shipped at places where no inspectors are stationed, and of course no prosecutions have followed in consequence of the difficulty in obtaining evidence to prove these illegal shipments. For the reception of animals before shipment, the local authorities at a few of the ports, or those having control of the port or harbour, have to some extent provided ample accommodation, but in too many cases the owners of the animals will not avail themselves of it. The most serious grievance, however, is that "shippers will not bring their animals for inspection and embarkation until almost the last moment, when all the other animals are on board. This course is adopted when they are desirous of having their animals landed the first at the port of debarkation, the belief, and with some reason, being that the last lot shipped will probably be the first landed—a great desideratum when time is an object, such as when the animals are intended for a near approaching market after their debarkation in Great Britain."—*Live Stock Journal.*

THE DECLINE OF PIG BREEDING.

That interesting, although not always well-savoured animal, the pig, seems to be fallen into disrepute in some of the districts where once the highest honours were paid to him. Mr. Giffen, in his report just issued, says that "pigs have declined slightly in Great Britain, and by as much as 13 per cent. in Ireland." He remarks that in both countries the variations in the numbers of the porcine race have been very considerable from year to year, and attributes these fluctuations to the scarcity or abundance of food for the time being. A more detailed examination of the agricultural returns themselves shows, however, that the decrease of pig keeping has been in the past year a very great deal more marked in some parts of the kingdom than the other. Not only Ireland, but also Scotland and all the north of England, seem to be giving up faith in swine, and the falling off in numbers noticeable in these

regions is only partly compensated by an increase in the South. The falling off amounts, in the whole of Scotland, to more than 13,000, head or 3½ per cent., a proportion which is enormously exceeded in some of the counties. As example of the extent to which pig keeping has declined may be mentioned Nairn, where the decrease is more than 21 per cent.; Renfrew, where it is 19; Kirkcudbright, 17; and Inverness, 15. Only in three or four counties has there been any increase, and in these the addition to the numbers has been altogether insignificant. As for the northern counties of England, they show an equally uniform falling off. Yorkshire, in spite of its ancient fame for hams, has lost 15,000 in the year, and the loss is distributed over all the three Ridings; Cumberland nearly 3000; Durham, Northumberland, and Lancashire, from 1500 to 1700 each. Finally, the Isle of Man has suffered the most severe diminution of all, the total population of porkers having decreased from about 6000 to about 4000, or at a rate of more than 33 per cent. The county which has best retained its respect for the pig seems to be Somersetshire, which shows an increase of 6000, or exactly six per cent., which may be set off against a decrease of 4000 in the neighbouring county of Devon. The Devonians are unlucky, it must be admitted, in having diminished their stock of these animals this year, inasmuch as there has not been for a long time an autumn in which the oaks yielded such a good supply of food which the swine like.—*Globe.*

EFFECTS OF NOXIOUS FACTORY GASES ON ANIMAL AND VEGETABLE LIFE.

A COMMISSION was appointed rather more than two years ago to inquire into the working and management of manufactories from which sulphurous acid, sulphuretted hydrogen, and ammoniacal or other vapours and gases are given off; to ascertain the effects produced thereby on animal and vegetable life, and to report on the means to be adopted for preventing the injuries which arise from these exhalations.

The following is a brief summary of their conclusions:—

Firstly, the Alkali Acts are to be amended; the number of inspectors' visits to factories, and their investigations, are to be more frequent and effective. Assuming one cubic foot of exit gases to mean one cubic foot of exit gases at 60 Fahrenheit, and under a barometric pressure of 30 inches, the escape of more than one grain of sulphur per cubic foot in the form of any of its acids is to be an offence.

The escape of more than half a grain of nitrogen in the form of any of its acids per cubic foot is to be an offence. But where sulphuric acid is being made from condensing sulphur gases, which would otherwise escape uncondensed into the atmosphere—those sulphur gases being meant which unavoidably escape from factories not subject to the Alkali Acts at all—then, as the condensation of the sulphur gases into sulphuric acid is obviously doing good, the foregoing legal limitations on the acid escapes are not to apply.

The deposit of alkali waste so as to cause a nuisance is to be made an offence; and similarly it is to be forbidden to allow alkali waste and acid drainage to come into contact.

Secondly, the Alkali Acts are to be extended. Works for sulphuric acid are to be brought fully under their operation; chemical manure works are to be subject to inspection, and required to adopt *the best practicable means* (let the reader note those words) for preventing escapes of offensive gases. Sulphate of ammonia works, tar distilleries, and gas liquor works are to be subjected to inspection, and required to adopt *the best practicable means* for preventing escapes of sulphuretted hydrogen. Coke ovens are to be subjected to inspection; and all coke ovens hereafter erected are to adopt the *best practicable means* for preventing escapes of black smoke, and for diluting sulphur compounds. Even the existing coke ovens, on complaint of nuisance or damage being made out to the satisfaction of the Local Government Board, are to be required, within a period of three years, to adopt the best practicable means for preventing the evil.

With regard to factories which the law does not at present touch, arsenic works, cement works, cobalt works, dry copper works, wet copper works, galvanising works, glass works, lead works, spelter works, nickel works, potteries where the glazing process is carried on, salt works, tin plate works, and works for making dyes from coal-tar refuse, are to be placed under inspectors, who are to report annually to the Local Government Board. As to all the works in this last-mentioned list, the Local Government board is from time to time to fix a standard of escape or to require the adoption of the best practicable means for preventing escapes.

Sometimes nuisance or damage is caused by the combined vapours which escape from several factories; but an aggrieved individual cannot obtain redress, for he is, of course, unable to tell which particular manufacturer it is that is injuring him. The hardship is to be met in future by providing that in all case of nuisance and damage alleged to be occasioned by more than one person, the Court shall have power to apportion

damages, and enforce contribution, also to award costs among the several offenders.

The localities which suffer most from these noxious factory gases are Newcastle and the Tyneside, Swansea, and certain other neighbouring districts in Wales; parts of Lancashire and Cheshire, near the valley of the Mersey and the banks of the Thames below London. Agriculture and horticulture, beyond a doubt, suffer most seriously from these injurious exhalations, cattle die from grazing on poisoned grass, farms become parched up, yellow, and will not let, while whole family seats sometimes—as has happened to Sir R. Brooke, near Widnes—have their parks, woodlands, and hedges slowly annihilated. All this is a very lamentable state of things, but in framing a law to deal with the factory fumes, many no less important considerations have to be taken into account. Whatever may be true with regard to vegetation and cattle, it has not yet been satisfactorily shown that human life is appreciably affected by factory acids. Widnes and St. Helens are full of factories, yet are not less healthy than the rest of England, and other illustrations might be given if space permitted. Where factories are built population rapidly increases, and thus the landowner, whose farm is spoilt, recoups himself three and four fold by letting ground for building; then, again, the present state of trade is so bad, and the outlooks for the future is so gloomy, that many furnaces have been blown out, many works closed, and such as remain have a struggle to keep up. In such a state of things new legislation, which should oblige manufacturers to incur fresh outlay for costly condensing apparatus and the like, would defeat its own object, for capitalists would withdraw from a no longer profitable trade, factories would be closed, and a widespread social disaster created by throwing thousands of operatives out of employment.

Another point is this, that chemists and the scientific world are still busy investigating the subject of factory gases, and how best to condense them and utilise them for commercial and other purposes. In Germany, for example, experiments are going on. In our present imperfect knowledge we cannot wisely attempt any stringent legislation. We should greatly harm manufacturers by compelling them to do something which may after all soon be found to be ineffectual, or not the best contrivance. This is why the Commision so repeatedly recommends that the Local Government Board, with the aid of its inspectors, shall from time to time require manufacturers to adopt *the best practicable means*; they do not tell us what the best practicable means are, because they themselves do

not know, and the means best practicable to-day may be superseded a year hence. It is useless—worse than useless—to prosecute a manufacturer unless you can show him how he can both carry on his business at a reasonable profit and also prevent the evil. This science is not at present in all cases able to do, and the consequence is that at Northwich the rural sanitary authorities have prosecuted and heavily fined the salt makers for not suppressing their black smoke, yet they confess that there has been "no improvement," and the President of the Salt Chamber of Commerce states :—"We are taking no steps whatever to consume our own black smoke. The local authority must fine me as long as they can; if they fine me to too great an extent I shall have to shut up. This will be the cases with all of us, and the trade will be driven from the district."

For our parts, it seems to us that as matters stand at present the Government, while passing a new and carefully-framed Act, would do well to offer very heavy prizes, open to all countries, for the best and most improved method of condensing factory gases and preventing their escape. Two points must also be remembered in mitigation of the case against the manufacturers—one being that a farmer, who is a sufferer, legally, can and frequently does, recover large damages or voluntary compensation from the factory-owners; and secondly, that factories gather together large populations, among whom the farmers sell their produce at enhanced prices. Still, whether a district be a populous, unsightly factory centre or a contiguous cultivated valley where Nature yet lingers, the social, moral, and physical well-being of the inhabitants, in either case, are objects which legislation and local effort should endeavour to improve in every available way. Therefore, the last word which we shall for the present have to say on the subject is that no pains should be spared which science and skill can suggest to purify the air and improve the landscape scenery in every district where large communities are gathered together.—*Land and Water*.

HISTOLOGICAL PREPARATIONS, A METHOD OF STAINING RAPIDLY.

By Dr. OBERSTEINER.

I HAVE long known that carmine staining acts quicker when the watch-glass containing the carmine and the section was not covered. But there is the disadvantage in this method, that particles of dust settle on the surface of the

fluid, and are apt to adhere to the section on its being taken out. I recently tried warming the fluid, in order to overcome this drawback, and also because I thought that the more rapid evaporation of the carmine solution accelerated the colour being taken up, and I arrived by this means at surprisingly favourable results.

After the first attempt had proved successful, I modified the procedure as follows:—Over a water-bath (only partly filled) with a large opening, a wire netting is placed, upon which, as soon as the water begins to boil, the section is put in a watch-glass containing the carmine solution, and exposed to the action of the steam. In the course of from two to five minutes the sections are completely stained. They are then washed twice in distilled water, placed for a few minutes in common alcohol, and for the same time in absolute alcohol, and may then be placed under the microscope in oil of cloves. Thus the whole process does not take more than ten minutes.

The sections are not only quickly but well stained, and indeed, as I have found by comparing results, for the most part better even than when submitted to the slow action of the carmine.

I have, however, only traced sections of the central nerve system (brain and spinal marrow of man and animals) by this method, but it ought to be applicable to other structures. It is, of course, understood that the previous preservation and hardening of the preparation must be well done in order to obtain a corresponding staining. For fresh preparations, or for preparations in alcohol (which latter are generally to be avoided as much as possible with the central nerve system), this method does not answer; objects colour best which have been hardened in chromate of potash (especially with the addition of a few drops of chromic acid).

Moderate heating does not hurt the preparation: the precipitate of carmine, which might be thrown down by it, may readily be avoided. A neutral ammoniacal solution of carmine, not too concentrated, furnishes all that can be desired.

It is not only on account of its rapidity that I now generally adopt this method, there is in addition the advantage that the preparations thus treated are coloured in a specially sharp and distinct manner; for example, the connective-tissue corpuscles, together with their long continuations into the substance of the brain, which insert themselves in the adventitia of the vessels, come out with a distinctness which it is difficult to obtain by other means.—*Journal of the Royal Microscopical Society.*

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD OCTOBER 2ND, 1878.

Present—The President in the chair; Professors Simonds, Brown, McCall, Williams, and Pritchard; Messrs. Balls, Batt, Blakeway, Broad, Cartwright, Collins, Cuthbert, Dray, Fleming, Freeman, Gowing, Greaves, Harpley, Morgan, Reynolds, Taylor, Withers, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of the last meeting were read and confirmed.

Correspondence.

Letters were received from Messrs. Cox, Moon, and Proctor, regretting their inability to attend the meeting.

A letter was received from Mr. Loch, enclosing a copy of the returns of the House of Commons, and the Order in Council at present in force on the Contagious Diseases (Animals) Act.

A letter from Mr. Powys, the Secretary of the Royal Veterinary College, forwarding a copy of the latest bye-laws and regulations for the acceptance of the Royal College of Veterinary Surgeons.

A letter from Mr. Fearnley, in which he desires to present to the Library a copy of his work on 'The Examination of Horses as to Soundness.'

On the motion of *Mr. Harpley*, seconded by *Mr. Fleming*, a vote of thanks was awarded to the donor.

A letter from Mr. Frank S. Billings, student of medical science at the Berlin Institute, enclosing a photograph of the late Professor Gerlach, director of the institute, for presentation to the Royal College of Veterinary Surgeons.

On the motion of *Professor Williams*, seconded by *Mr. Dray*, a vote of thanks was passed to Mr. Billings for his presentation.

A letter from Mr. Frank Payne, of Devizes, a student of the Royal Veterinary College, stating that he had been rejected three times on his first examination under the old rules, and wishing his case to be laid before the Council.

The *Secretary* stated that a reply was written to the effect that, in accordance with the bye-laws of the College, Mr. Payne would be *ineligible* to present himself again before the Court.

Mr. Taylor thought the bye-law was an iniquitous one, and expressed his intention to move a resolution for its abolition.

A letter from Dr. Dunsmure containing the report of the July examinations was read.

Letters were read from Mr. Davies, of Oswestry and Mr. Joseph Wicherley, who were both rejected under the old rules. They had been rejected twice, and he, Dr. Dunsmure, wished to know what course they were to adopt—whether they could come up for examination at Christmas.

The *Secretary* stated that the two gentlemen came up under the old rules, and he thought the same system should be adopted in Scotland as was adopted in England, namely, that there should be a Board for the first, and also for the two years' examination on the same evening. If this system had been adopted these gentlemen would probably have come through.

Professor Williams said the question was put by him at the last meeting of the Council, and it was then voted that there was to be no examination for these men.

Professor Simonds said there was only one Court of Examiners at the present time, which was separated into two parts, one section acting for Scotland and another for England; and if anything like seven students could be mustered from the three schools, the Court could be called together without any violation of the bye-laws.

Professor Williams pointed out that if Bye-law 46 was to prevail the gentlemen referred to would not be examined at all. Were they to make a composite examination in London, Glasgow, or Edinburgh, or what were they to do? He thought the men were entitled to an examination.

The *President* thought that the Council should not act harshly towards those students who came up under the old rules, and they ought to concede the point and clear such students off. There should be two more examinations under the old system, and this, he thought, would meet the justice of the case.

Professor Simonds.—Do you mean two more for the final examination or the first?

The *President* said he would propose to join them together.

Professor Simonds said that that could not be done. If he understood rightly, the final examination for the diploma would cease next July.

The *President* said that that was so.

Professor Simonds remarked that those who had passed their first examination at Christmas must return to the school and conform to the rules before they were eligible for their second examination. The examinations could not be put together. By throwing the three schools together and making up a certain number of students they would be justified in calling the Court

together for the first examination. After a time these men would be eligible for their second examination.

Professor Williams said the men referred to by the secretary had not had the opportunity of presenting themselves in Edinburgh. If a mistake had been made the men ought to have the advantage of the mistake, and to present themselves at Christmas for examination; and if the final examination was to cease in July, these men, if they were suffering from a mistake made by the honorary secretary, they should be allowed to present themselves for their second examination in July next.

Mr. Fleming asked if it was necessary that the seven should be examined under the rule referred to. He was sure the time would come when there would only be three or four candidates who might be examined otherwise: the rule ought to be broken.

Professor McCall hoped, that whatever was agreed, the men should be allowed to present themselves for final examination at Christmas.

After some conversation on the matter,

The President said it was quite clear the gentlemen in question could not pass under the old rules. A certain number of terms would be required between each examination.

Mr. Gowing thought there ought to be some existing period in which they could come up and present themselves, and if they were not then in a position to pass, the rules might be brought to bear against them at a future period.

After several suggestions and counter-suggestions,

Professor Williams gave notice that at next meeting he would move that Bye-law 31 of the old rules be suspended as regards those students who were not allowed to present themselves for the first examination in July, 1878.

The Fitzwygram Prizes.

The Secretary read the report in reference to the examination for the above prizes.

The Fellowship Degree.

The report in reference to the examinations for the above degree was also read.

The Secretary stated that a letter had been received from Professor Fearnley, Elgin Road, St. Peter's Park, who stated that some gentlemen were about to read with him for the Fellowship degree, and if less than four he wished to be informed whether there were any others who proposed to go up on November 1st. He (the Secretary) was not aware of any gentlemen who wished to go up then.

Professor Williams, referring again to the final examination, asked, whether if there were less than nine next April or July, whether they were entitled to an examination under the rules.

Professor Simonds.—The old bye-law is under operation.

Professor Williams.—No. 31? but it is the same as 46 in the new bye-laws.

The President pointed out that there was no limit as regards numbers, under the old bye-law.

Professor McCall begged to propose—"That there should be a final examination at Christmas under the old system, and also in July.

Mr. Fleming seconded the motion.

Professor Simonds said there would be a meeting of the Court of Examiners at Christmas, April, and July. He thought it would be fair and just that those who were eligible for their final examination at Christmas, if rejected then, should be allowed to present themselves in April; if then rejected, to present themselves in July. If again rejected, then there would be an end of the matter,

Professor Williams moved—"That irrespective of numbers, three examinations under the old system be held, namely, at Christmas, April, and July next."

Professor McCall seconded the amendment, in favour of which he withdrew his motion.

The amendment was put and carried.

The obituary notice was read.

In answer to *Professor Pritchard,*

The President stated that hitherto there had not been a committee appointed by the Board to report upon the examinations in reference to the Fellowship Degree, but in future a committee might be appointed, if thought advisable, by the Council.

Finance Committee.

The report stated that the vouchers and receipts for payment during the preceding quarter had been examined and found correct. The Treasurer's quarterly balance sheet represented liabilities to the amount of £126 15s. 10d., which the committee recommended should be discharged. There was also appended a detailed statement of the cost of examinations in Scotland as requested at the last meeting of the Council.

Some discussion followed as to what some of the members considered excessive charges for the Scotch Examinations.

Mr. Fleming explained that the seeming excessive charges might be accounted for by the fact that there were two examinations on one day.

The matter was then allowed to drop.

Cheques were ordered to be drawn for the current expenses.

The report of the House Committee was read, which, with the report of the Finance Committee, was received and adopted.

Petition to the Duke of Richmond.

The President read the following report of the interview with the Lord President of the Council.

The Committee appointed by the Council have to report that they obtained an interview with His Grace the Duke of Richmond, President of the Privy Council.

The Committee urged the claims of the veterinary profession on the favourable consideration of the Government. His Grace fully admitted those claims and promised to bring them before his colleagues. But he added, "In the present state of the Exchequer, and having regard to the present demands which are being made by the present crisis on the National Funds, I fear I must say that the present is not a favorable opportunity of pressing your claims."

The Committee then asked the assistance of his Grace in obtaining rooms in one of the Government buildings in case no pecuniary grant could be made at present. His Grace said he was afraid all the Government buildings were at present fully occupied, but promised to make inquiry.

His Grace then asked what sum in the way of grant the Royal College of Veterinary Surgeons would require. The answer given was to the effect, that the purchase of ground and erection of suitable premises would cost about £6000; that nearly £2000 had been subscribed; that £2000 might be borrowed on the security of site and buildings if the Government would give £2000; that the interest of the borrowed money would be about equal to the rent at present paid for the inadequate premises in Red Lion Square.

The deputation having thanked his Grace for the kindness with which he had listened to them withdrew.

The Committee think that the application might be renewed with advantage about the time when the estimates for the year are being prepared.

TERMS OF AGREEMENT WITH THE HIGHLAND AND AGRICULTURAL SOCIETY.

The Secretary read the articles of agreement between the Council and the above society, and some discussion ensued as to several points.

In reference to the period for the termination of the society's examinations,

Mr. Fleming moved to fill in the blank in the draft of agreement with the words—"That the examinations of the Highland and Agricultural Society cease from and after the date of the signing of the agreement."

Mr. Dray seconded the motion.

An opinion having been expressed by several of the members adverse to the above proposition,

The President suggested as an amendment, "That the examinations cease from and after the 1st January, 1879."

This was agreed to, and it was also resolved to send the agreement to Mr. Loch, so that it might be drawn up in accordance with the views expressed by the members of the Council.

On the motion of the *President* a committee, consisting of the President, and Messrs. Harpley, Collins, Williams, and Robertson, was appointed to draw up the exact terms of the agreement.

The meeting having terminated,

A SPECIAL MEETING

was then held to consider the notice of motion given by the President as to the alteration and amendment of Bye-law 49, and the cancelling of Bye-law 50.

The President explained that the matter had been discussed at previous meetings, and reiterated his views on the subject. Several members of the Council had expressed a strong objection to an examination before the College of Preceptors. On the other hand it was felt by other members that it would be extremely objectionable to admit to the Fellowship Degree any candidate except those who were really qualified by literary attainments for the higher branch of the profession. A compromise had been suggested in lieu of Bye-law 49, which ran as follows:—

"49. At least once in each year, at such time as may be appointed, the Council shall appoint a special Court of Examiners for the purpose of examining candidates applying for the degree of Fellow. But no examination shall take place unless there are at least four candidates. This special Court shall consist of not less than three members."

It was proposed to insert, instead of "three," the word "four," and also to add, "of whom one shall be a member of the College of Preceptors." It would then read, "That no examination shall take place unless there are four candidates. This special Court shall consist of not less than four members, of whom one shall be a member of the College of Preceptors." It was proposed to altogether expunge Bye-law 50. The result would be that there would be three professional examiners and one literary

examiner, and he believed that this would be acceptable to the feelings of the profession generally.

Mr. Fleming, in seconding the motion, said he looked upon any reduction in the test for the fellowship degree with very unfavourable eyes. He thought, however, that those gentlemen, before the degree was made, should have some exemption from the severe restrictions which were imposed on those who now attended the schools. It was in the hands of the Council and the hands of the Fellows to see that none but those who were worthy of the honour should be admitted into the rank of Fellows; and he trusted that if the bye-law was expunged and the new one substituted, the Council would take into consideration the application of as severe a test as could be submitted to with any success by those who had been in practice for some time, and desired to get the fellowship degree. The great curse of the profession had been the want of education, to meet which the degree of Fellow had been instituted.

The motion was put and carried.

The *President* said he wished to move in connection with this, that a committee be appointed to draw up instructions to the College of Preceptors as to the standard of education to be employed in reference to the obtainment of the fellowship degree.

Mr. Broad seconded the motion, which was carried, and a committee was subsequently appointed, consisting of the President and Messrs. Fleming, Harpley, and Taylor.

Mr. Fleming called attention to the successful efforts that had been made by Mr. Cowie, a member of the Royal College, and 500 other members of the profession, in inducing the French authorities to modify the custom which had hitherto prevailed in the French veterinary schools of practising upon living animals, and said that Mr. Cowie, in a letter, had expressed himself anxious that the Royal College of Veterinary Surgeons should give an expression of its gratitude for the diminution that had been effected in the operations on living structures in the French schools.

Mr. Taylor thought that as there might be some exaggeration and misrepresentation on the subject, such a vote as was proposed ought to be considered cautiously before it was passed.

After some desultory conversation it was agreed that Mr. Cowie's letter be laid on the table.

Mr. Taylor gave notice that three months after the present date he should move that Bye-law 37 be expunged.

The Council then adjourned.

A SPECIAL MEETING OF COUNCIL HELD OCTOBER 16TH, 1878.

Present—The President, Messrs. Balls, Broad, Collins, Dray, Moon, Withers, and the Secretary.

The President in the Chair.

The minutes of the two preceding meetings were read and confirmed.

On the motion of the President, seconded by Mr. Dray, the amended "bye-law 49 and bye-law 50" cancelled, as adopted at a Special Meeting of Council held October 2nd, were duly signed and sealed in accordance with the provisions of the Charter.

GLASGOW VETERINARY COLLEGE.

Opening of the Session.

The winter session of the Glasgow Veterinary College was opened October 23rd by an introductory lecture by Principal M'Call. There was a large attendance. Mr. George Fleming, the editor of the *Veterinary Journal*, presided, and on the platform were the Rev. Mr. Watson, Mr. Graham, Lambhill; Mr. R. Walker, of Lethamhill; Mr. J. G. Sandeman, Glasgow, and a large number of veterinary surgeons from Glasgow and neighbourhood.

Principal M'Call, after expressing the pleasure it gave him to meet with the students for the work of another session, said it had always been his custom to advert to a few topics which would have a public as well as a professional interest. Two years ago he referred to the past and present curriculum of students of veterinary science, and to the past and present results of the operation of the Contagious Diseases (Animals) Act. As they had now entered on the second year's experience of the new and extended period of study, and also this present month had had the new Contagious Diseases (Animals) Act placed in their hands for execution, on behalf of the Privy Council, and also on behalf of the Local Authority of Glasgow, he proposed to continue the consideration of these two subjects. The learned Principal then referred to the fact that while previously the course of study for the diploma embraced a period of two winter sessions of four and a half months each, and the passing of an examination in several subjects, now the period of study embraced three winter sessions of over five months each, and two summer sessions of

little less than three months each, and the candidates for admission had to pass through three separate examinations of more extended range. Besides, the fees had been raised from 16 guineas to 36 guineas; and there were some who prognosticated that the introduction of this new scheme would be utter ruin to this institution. Instead of that he was glad to say that at no other period in its history—both as regarded the number and efficiency of its students and its financial position—had it stood on so broad and firm a basis. (Applause.) The total result of the three years' system could not exactly be computed until April next, when the senior students would pass up for final examination to obtain their diploma, but he prognosticated that the result would be satisfactory to all the three parties concerned—to the examiner, the teacher, and the student. (Applause.) Turning to notice the beneficial operation of the Contagious Diseases (Animals) Act, Principal M'Call said the tax of two-thirty seconds of a penny to meet the expenses connected with the slaughter and compensation to proprietors of cattle affected with pleuro-pneumonia had of necessity given rise to a variety of opinions, some thinking that it partook of class legislation. He did not intend to give a dissertation upon that subject. But that certain diseases existed, and had existed for years, and had resulted in the destruction of large numbers of their herds, was admitted by all. Acts of Parliament had been passed, and Orders of Council had been issued; and notwithstanding they had some diseases which are not indigenous but imported continuing to exist in our country; and the bare fact that they did exist had been sufficient evidence for large sections of the community to make up their minds that Acts of Parliament and Orders of Council and all connected therewith were utterly valueless and should be swept away, and a return made to the old system of "do nothing" and "let alone." If they would bear with him, and allow their minds unbiassedly to deal with facts and figures, he believed he could prove to a demonstration that Acts of Parliament and Orders of Council, when allowed to have a fair field and no favour, or, in other words, were put in operation and kept in operation according to the spirit and the letter therein contained, could do much to subdue these diseases if not entirely extinguish them. In Glasgow, under the Local Authority, the various Orders of Council had been enforced to the very letter; and if the Act had been a failure in this city he alone was to blame. But how many Local Authorities had done their duty in Scotland? Not a dozen, and hardly another to the same extent as Glasgow. (Applause.) Every county and burgh had a separate Local Authority, but the good done by a dozen was swallowed up by the others, and the sum total

placed the little at the credit of the operation of the Act as a whole. But if one Local Authority could show good results from the operation of the Act in its hands, was it not reasonable and right to draw the inference that all Local Authorities might show to a certain extent a similar proportionate amount of good? He thought so. What, then, were the results obtained through an efficient working of the Act in this city? To arrive at an estimate of its worth, it was well to consider the results of the spread of contagious disease among the cattle in the byres prior to the passing of the first Act. Until the ever-memorable year of the cattle plague—1865—statistics were not available for demonstrating the losses sustained by stock proprieters from contagious diseases. Having been asked to inspect the dairies and cattle sheds within the city bounds with a view to their being licensed under the Cattle Sheds or Burghs (Scotland) Act, and also to furnish statistics of losses sustained by dairymen during the prevalence of the cattle plague, he at the same time availed himself of the opportunity for collecting statistics regarding the losses sustained from pleuro-pneumonia. And in order to make these statistics of practical use, and to suggest measures for limiting the range of the disease, and also to demonstrate how formidable an enemy they had to deal with, he carried his inquiries as far back as 1853. During the twelve years prior to 1866, in this city alone, 3759 cows died from pleuro-pneumonia, 1594 cows were slaughtered on account of being affected with pleuro-pneumonia, and the actual money lost, although the cows were then considerably cheaper than they were now, was £54,677, which represented an annual loss of £4556. From 1866 till August, 1869, at which latter date the Contagious Diseases (Animals) Act became law, no statistics of disease sufficiently reliable to be founded on could be adduced, but from that time until the present moment he could give day and date for every animal that had died, or that had been slaughtered within the burgh of Glasgow affected with pleuro-pneumonia. From August, 1869, till August, 1872—three years—258 cows were attacked, 139 cows were killed, 28 died, and 91 recovered from pleuro-pneumonia. Making a computation on the same principle as formed the basis of the previous statement, the value of cattle destroyed by this disease during these three years was at the rate of £650 per annum. In other words, for the twelve years prior to the passing of the Act in Glasgow the dairymen lost £4556 yearly by pleuro-pneumonia; but since the Act their losses from the same disease up to that date had been reduced to £650 per annum. In 1873 the Privy Council issued an order making it compulsory on Local Authorities in England and Scotland, but

not in Ireland, to slaughter without delay all the cattle affected with pleuro-pneumonia, and granting compensation to their owners at the rate of one-half of the actual value of the animal. Prior to this compensation had never been granted in Great Britain, although it had been granted on the Continent. In August, 1873, he received instructions to carry out the provisions of the Order, and with little variation he continued to do so until the present hour. The result had been that in 1873-74 203 cows were slaughtered, and £1011 paid in compensation; in 1874-75 70 cows were slaughtered, and £502 16s. 9d. paid in compensation; in 1875-76 73 cows were slaughtered, and £676 12s. 6d. paid as compensation; in 1876-77 111 cows were slaughtered, and £712 15s. paid as compensation; and in 1877-78 34 cows were slaughtered, and £194 15s. paid as compensation. It would thus be seen that for the twelve years previous to the passing of the Act the losses from pleuro-pneumonia had been £4556 annually; for the past five years the average was £619, and for the present year £194. In these circumstances he was warranted in drawing the conclusion that the mortality and actual money loss from pleuro-pneumonia with or without compensation being awarded were, under the system of inspection instituted and maintained by the Local Authority of this city, reduced to one-seventh of what they had been prior to the passing of the Act in 1869, and when the "do nothing" or "let alone" system held sway. Now the new Act allowed compensation to the amount of three-fourths of the value of the animal, and prohibited all movement of diseased animals, or animals that had been herded with diseased animals within the jurisdiction of the Local Authority, except with their permission; and further closed for fifty-six days premises where disease has existed. He was of opinion that if all Local Authorities did their duty the ravages of pleuro-pneumonia, like those of cattle-plague, would become a tale that had been told. (Applause.) Principal M'Call afterwards referred to the position of the Highland and Agricultural Society with regard to the profession. For many years that society had held examinations and granted certificates, but in no clause of its charter had it power to grant these certificates or diplomas in veterinary science. They had acted illegally in doing so, and the document issued by it, however competent the examiners, was an illegal document, and conferred no power of admission to the veterinary profession. There was only one chartered body legally empowered to grant diplomas to veterinary students, and that was the Royal College of Veterinary Surgeons — all its members, whether educated in London, Glasgow, or Edinburgh, being placed on the same platform by virtue of having the same degree. He referred

to the attempts that had been made by the Highland Society to obtain power to grant diplomas, and spoke against the idea of having a Scottish body with such privileges. He was in favour of there being no monopoly in teaching, but he wished to continue the monopoly of granting degrees: for rivalry there meant discord, weakness, and jealousy—the splitting up of the profession into a number of weak bodies rivalling each other in granting the greatest number of diplomas at the cheapest price. (Applause.) He was, however, glad to tell them that an agreement was being adjusted between the Royal College and the Highland Society whereby, on certain conditions, all persons holding the society's certificate would be allowed within the ranks of the profession, but on the distinct understanding that the society shall for the future cease to examine or grant any certificate to veterinary students, and that that agreement might be finally consummated ought to be the prayer of every friend of the profession, and of the whole body corporate. (Applause.) Principal M'Call concluded by giving a few words of advice to the students on entering for the first session.

On the motion of the *Chairman*, a hearty vote of thanks was awarded to Principal M'Call for his valuable address; and a similar compliment having been paid to the chairman, the proceedings terminated.

OPENING OF THE SESSION AT THE ROYAL VETERINARY COLLEGE.

The Medical Session at this Institution was commenced on October 1st, in accordance with established custom. The inaugural address, which was delivered by Professor Brown—and which we insert in another part of the Journal—was of more than ordinary interest, and was listened to with marked attention by the large gathering of friends of the Institution which had assembled.

Accustomed, as we have been, to witness many of these annual *reunions*, we do not remember to have seen the lecture theatre and its approaches, including the museum, more densely crowded.

The chair was occupied by R. B. Berens, Esq., a Trustee of the College, who was supported by Gen. Sir Frederick Fitzwygram, Bart., J. Collins, Esq., Veterinary Surgeon General—Governors of the Institution—the Principal and Professors; J. Peel, Esq., Clerk to the Privy Council; Professor Williams of the New Veterinary College, Edinburgh;

Professor McCall of the Glasgow Veterinary College; the Chief Inspector of the Veterinary Department of the Privy Council Office; the Treasurer and Secretary of the Royal College of Veterinary Surgeons; and several members of the Court of Examiners and of the Council. A large number of town and country veterinary surgeons of distinction, many members of the medical profession, and numerous friends and relatives of the pupils were also present.

On the conclusion of the address, the Chairman distributed the several prizes and certificates to the successful students and office bearers of last year, addressing some well-timed and appropriate remarks to each. He announced that the Scholarship of £25 per annum for two years, dating from October, 1877, had been awarded to Mr. Sidney Villar, Taunton, Somerset, honorable mention being made of Mr. D. Gregory, Tunbridge, and Mr. G. C. Deveson, Kilburn. The amount of the *second year's* Scholarship was then handed o Mr. Batt.

The other awards were as follows:—

COLEMAN PRIZE.—*Silver Medal*—Mr. J. R. Carless.
Bronze Medal—Mr. R. P. Bull.
Certificate of Merit—Mr. F. W. Day.

Mr. F. R. STEVENS, *Certificates*—as Assistant-Inspector at the annual meeting of the Royal Agricultural Society; of Distinction at Examination for Diploma; as Clinical Clerk and Monitor.

Mr. J. H. CALLOW, *Certificates*—as Assistant-Inspector Royal Agricultural Society's meeting; of Distinction at Examination for Diploma and as Clinical Clerk.

Mr. G. L. DIXON, *Certificates*—as Assistant-Inspector at the Smithfield Club Meeting; as Clinical Clerk and Monitor.

Mr. G. WARTNABY, *Certificates*—as Assistant-Inspector at the Smithfield Club Meeting; as Clinical Clerk and Monitor.

Mr. G. R. DUDGEON, *Certificates*—of Distinction at Examination for Diploma; as Clinical Clerk and Monitor.

Mr. E. M. PERRY, *Certificate*—of Distinction at Examination for Diploma.

Mr. J. R. CARLESS, *Certificates*—of Distinction at Examination for Diploma; as Clinical Clerk and Monitor.

Mr. J. Broad, *Certificates*—of Distinction at Examination for Diploma; as Clinical Clerk and Monitor.

Besides the foregoing, the following members of the profession, late students of the College, received Certificates of having served as Clinical Clerks :—

Mr. C. Betser.
— J. J. Stephens.
— W. E. White.
— F. Kennedy.
— F. W. Forsdyke.
— J. Cook.
— C. G. Poulton.
Mr. W. A. Hancock.
— S. Sturgess.
— W. Markham.
— R. P. Bull.
— F. W. Day.
— E. Allen.
— A. W. South.

And the subjoined as having held the Office of Monitor :—

Mr. G. Fowler.
— J. Burchnall.
— F. Gibbings.
Mr. R. P. Bull.
— E. Allen.
— A. W. South.

On the conclusion of the distribution,

The Chairman said, After the able and lucid address which Professor Brown has just delivered, it is hardly necessary for me to say much, but there is one particular point to which I wish to call the attention of the students, and that is, the course of education which has been lately laid out for them.

Gentlemen, Sir Frederick Fitzwygram, Sir Paul Hunter, and other Governors, aided by the Principal and Professors, have taken great pains and spared no time to make the course of education as useful and valuable for you in your future profession as they can do. It remains for you to show that they have not lost trouble in their exertions. You, I hope, will profit by that course of study, and be enabled to become a credit to yourselves and to the Royal Veterinary College.

For some time past the Governors have been studying this matter, and have, they hope, now succeeded in making the College course as perfect and complete as it is possible to be. The medical profession, many of whose members I am happy to see here to-day, is called a noble profession, and I honour and respect it as such; but I think also the profession which you are now about to embrace is very noble. The one profession has to assist human beings in their maladies and their ailments, but your profession has to assist dumb animals, who have no power to help themselves, and therefore unremitting attention is more needed on your part than it may be in the case of a human being. (Applause.) At the same time, from my own knowledge of animals, I do say, that very often they show

themselves as highly intelligent as human beings are in the description of their maladies; they are pretty sure to hold their foot up or to turn their head towards the place where they have pain or trouble. I hope we shall hear of you all in future time that you are fulfilling your duties with that diligence and assiduity which ought to distinguish you as members of the veterinary profession, and that we shall hear of you hereafter as being an honour to yourselves and an honour to the College in which you have been educated. (Applause.)

General Sir Frederick Fitzwygram.—Gentlemen, I rise to propose a warm and cordial vote of thanks to the Chairman of the day. Mr. Berens is not only one of the most earnest of the Governors of this School, but he is also one of the oldest Governors, and in him I may say the governorship of this great school is almost hereditary, for his great uncle became a Governor in the year 1810, and was afterwards succeeded by his nephew, who is now succeeded by the gentleman who has presided over this meeting. (Applause.) Gentlemen, in this age of the diffusion of knowledge generally and of science, especially in the laws of sanitary science, we have no trouble in finding able and distinguished men to become Governors of this Institution, but I think this Institution especially, and veterinary science generally, owes a deep debt of gratitude to men who, in an age of ignorance, came forward, like the Mr. Berens', and gave encouragement and assistance to the dawn of veterinary science. I beg to move a vote of thanks to our Chairman. (Applause.)

The vote having been carried by acclamation,

The Chairman said, I am very much obliged to you for the honour you have done me, and also the honour which has been done to my ancestors; you may excuse me for being a little egotistical, but my family have always taken great interest in this College; and since I have had the honour of being appointed a Trustee with two of the most valuable Governors that this Institution ever had, Mr. Bosanquet and Mr. Newdegate, I have always done my best to be as useful as I could, and you may depend upon it that no effort on my part will be left untried for its benefit. (Applause.)

OPENING OF THE MONTREAL VETERINARY COLLEGE.

The opening Lecture of this College was delivered lately by Professor Wm. Osler, M.D., M.R.C.P.L., before a large

and appreciative audience of students, medical men, and veterinary surgeons. The subject chosen was "Comparative Pathology," and being one to which the lecturer had given special attention, more particularly during the past summer, he having been engaged with Dr. Burdon Sanderson and Dr. Klein, at the Brown Institute in London, especially on this and kindred subjects, a more than ordinary exposition of the present position of this study was expected, and the audience were not disappointed. The Doctor after defining the subject, Pathology, as being the physiology and microscopic anatomy of disease, went on to explain the theories and results of recent investigations of *contagium vivum;* the discovery of *Bacteria* in the blood of diseases of the anthrax variety; the recent discovery of these organisms in the blood in the so-called hog-cholera or, as it was more properly named, "*contagious pneumo-enteritis*" by Dr. Klein. The Doctor next referred to the unjust "Contagious Diseases (Animals) Act of 1878," recently passed in England, to come into force on the first of January next, by which our cattle trade was to be seriously interfered with, if not ruined. All American cattle, including Canadian, were to be slaughtered at the port of entry. In Canada we have no contagious diseases, and it is manifestly unfair to include our cattle. In the Western States, it is true, they have the *splenic fever* (Texas fever) and *pneumo-enteritis* in pigs. Our Government should lose no time in placing the matter in proper veterinary hands; all out-going stock should be inspected by qualified inspectors. He referred to the advantages already derived from the quarantine at Point Levis. An animal affected with hog cholera arrived, and was detained by Mr. McEachran, the inspector, and thus prevented from spreading a virulent and contagious disease among our stock. The Government should do everything to render the quarantine more efficient. The lecturer concluded his lecture by explaining to the students the nature of their studies, urging them to entertain a high appreciation of scientific study, to be regular in their attendance, and to adopt a systematic disposition of their time, and to take advantage of the opportunities afforded them while students here.

Prof. McEachran followed with a few words of welcome to the students. He was happy to find that year by year the number increased. This session showed an increase of ten over the previous one. Over thirty had already enrolled—thirteen from the United States. Illinois, Wisconsin, Massachusetts, New York, Pennsylvania and Vermont had sent their representatives. Toronto and Ottawa were represented also, and he was particularly glad to find no less than thirteen French Canadian students among the number. On account of the prevalence of the "boat

race fever," he had yielded to the request of the majority of the students, who had taken it, and the lectures proper would be postponed till Thursday morning, when he hoped all would settle down to the active duties of the session.

VETERINARY MEDICAL ASSOCIATON.

The first General Meeting of the members of the Veterinary Medical Association was held in the theatre of the Royal Veterinary College on Tuesday evening, the 15th of October, 1878, being the opening meeting of the forty-third session; the President, *Professor Pritchard,* occupied the chair; 10 members of the Royal College of Veterinary Surgeons and 55 students, members, and visitors attended..

The minutes of the last meeting were read; the names of seven gentlemen to be elected members were submitted. The Secretary then read his "Review of the Proceedings of the Association during the Session 1877—78," as approved by the Council. It was as follows:—

Sir and Gentlemen,—There was a time-honoured custom in this Association, a custom adopted in almost all learned societies, and generally considered beneficial, that a summary of work done during the past session, and of prospects of the Association, and a concise statement of changes in its constitution which its particular phase of evolution may have necessitated, should be presented to new and old members together at the opening meeting of a fresh year of work. In accordance with this custom, and in the hope that by so doing I may bring to the minds of our members thoughts of the past glories of the Association, I venture to trespass upon your time and patience on this occasion.

We are now entering upon our forty-third session, and it may not be out of place to call attention to the fact that long before many of us were born, the Association, whose professional position now falls on us as a trust, we are bound in honour to uphold (it has been handed down to us by our fathers), was doing valuable work and rousing professional spirit, scientific research, and *esprit de corps.* In the days gone by they hotly contested professional points in its debates; in the days gone by they brought their minds to bear on all subjects touching the advancement of the veterinary profession and the

progress of veterinary science. It was here they met in friendly rivalry to discuss professional topics, and it was here they laid the foundation of the high scientific position many of them occupy in the present day. I have but to open the list of members, fellows, and associates, to find at once so many well-known names that it would be invidious to specify any of those who now lead our profession, who once led the debates in our Association; but without fear of hurting the feelings of any I may point out to you the names of Coleman, Spooner, Sewell, Morton, Youatt, Dick, Blaine, and Percivall, who have finished their work, and are now at rest. I may point out to you, too, the names of many leaders in the advancement of medical science who were associates of the Veterinary Medical Association, and appreciated its value and studied to promote its welfare. Professor Brande, Sir Benjamin Brodie, Sir A. Cooper, Bransby Cooper, Bright, and Erasmus Wilson, form but a part of the list of those who have laboured in our own country. Amongst foreign associates are included Reynault, Gurlt, Lassaigne, Hertwig, Goubaux, and many others. Shall we not then deem it privilege to advance a work supported by such men? shall we not "strain every nerve" that we may prove no mean successors to those who have paved our way; may zealously uphold the status of our Association? In advancing its interests we are promoting our own.

We are all seekers of knowledge, especially such as bears upon veterinary science. Whenever we submit an essay, exhibit a specimen, or advance an idea openly at the meetings, we give information to others, and we receive from them three or four-fold. The freedom of debate, which is one of the rules of the Society, enables us to submit original ideas and thus to render them public, whereby their wheat may be sifted from their chaff; that freedom, too, should train us to be independent in the statement of our professional opinions and in the support of professional interest. Who that has exposed himself to the searching scrutiny of our members in debate when launched into professional career need fear intelligent cross-questioning by a well-read client, or the adroit sarcasm of a man learned of law? The mere opportunity of practice in the public elucidation of ideas, if of value to the young man as giving him the *ars loquendi* and the necessary self-confidence, the heat of debate makes him ready in logical expedients quickly to seize the prominent points of an argument, and prompt in reply. But in addition to this the matter of our meetings brings under a novel form fresh information, and suggests entirely trains of thought. The student hard at work preparing for examination may here learn more than by toiling at his books, or often by attendance upon

lectures. He will have it deeply impressed on his mind ready for use in any emergency of examination or of practice. The liberty of choice of essay subjects thus proves of value. The junior student may attend, gain information which may be useful to him at the future stages of his study; he may apply his present information, and will often very materially add to it matters of immediate value to him. Thus, during the past session one of our vice-Presidents, Mr. N. Almond, brought forward the subject of "Nomenclature and Classification of Remedial Agents" in an able manner; and there is ample scope, not only for novelty, but for the imparting of valuable information to the profession at large in the treatment of the application of botany and chemistry to veterinary science, or the record of observation of the influence of physical forces upon the animal system. Do not then, gentlemen, who are now among us for the first time, imagine you have no business here; work with us, correct our errors, and we will rectify yours. We give you hearty welcome. To those who are advanced one step in their studies we offer papers on anatomy and on physiology; we show them specimens illustrating normal and abnormal structures, we work with them at anatomy and physiology, and we show them how these sciences prove the bases of surgery and medicine. During the past session we have had no papers solely on anatomy, nor any solely devoted to physiology; we seek their co-operation, and shall appreciate their assistance. Many anatomical statements made during the course of debate require correction, and operative veterinary surgery and medicine yet demand much from the labours of the anatomist and physiologist. Here is a noble scope, a wide field in which the second year's student may do good work, work which will be of value to our common science.

Our session which has passed must have been of particular interest to students of all grades, but especially to those under whose *immediate* notice surgery and medicine come. The following list of essays read will show the range of our debates, and the amount of information they must have imparted:—

November 13th. Mr. Gibbings, "Lameness in Horses."
,, 27th. Mr. South, "Sandcrack."
December 11th. Mr. Moore, jun., "Sandcrack."
,, 11th. Mr. Dudgeon, "Scarlatina in the Horse."
January 15th. Mr. Wartnaby, "Parasitic Bronchial Disease of Calves."
January 29th. Mr. Almond, "Nomenclature and Classification of Remedial Agents."
February 5th. Mr. Moore (M.R.C.V.S.), "Influenza Epizootica of America in 1872."

February 19th. Mr. Fowler, "Glanders and Farcy."
March 12th. Mr. Avis (M.R.C.V.S.), "Scab in Sheep."
,, 19th. Mr. Storrar (M.R.C.V.S.), "Parturient Apoplexy."

Of these essays, and their resulting debates, several occupied two consecutive nights of meeting, and in many cases the discussion was highly animated. Three members of the Royal College of Veterinary Surgeons, it will be seen, read papers, and another had forwarded a paper on "Rabies," which remains in the hands of the secretary. The author, D. H. Tombs, M.R.C.V.S., died since the end of last season; we record with regret the loss of an active co-operator and prizeman of the Association. Many qualified practitioners have attended our meetings, and have taken part and been much interested in our debates, showing that they have not forgotten that they are members of the Association. We shall appreciate even more active aid from them, and the Council has taken means to promote it. In the above list of subjects it will be seen that under headings "Lameness in Horses" and "Sandcrack," surgery has received due attention, and we may especially recall the animated debate and energetic argument which attended our almost exhaustive treatment of this subject. Mr. W. South's method of procedure has been adopted by many practitioners, and found useful; and we are indebted to Mr. J. Moore, junr., for his description of the means which he has found useful in the treatment of this affection. Parasitology in its ectozoal and entozoal aspects was treated by Messrs. Avis and Wartnaby respectively, and their papers serve to show that we extend our inquiries to all the domesticated animals in health and disease. A novel blood disease was submitted in Mr. Dudgeon's paper on "Scarlatina," and from it we deduced interesting questions of comparative pathology. The question of the prevention of contagious diseases and of sanitary measures was brought up in a long debate on Mr. Fowler's paper, and the same questions, as well as some considerations of geographical range of disease, were suggested by Mr. Moore's essay. The debate on the physiology of the nervous system in relation to parturition and its results, and the theoretical views advanced on the pathology of "Milk Fever," render Mr. Storrar's paper memorable.

But there is another feature of our meetings which requires comment. To many practitioners and other members we owe valuable specimens, morbid and normal. To specify all that have been submitted to us during our session would be too long a task, but I may call attention to a few. Case of long-standing "nasal gleet;" case of "paralysis resulting from rupture of vessels;"

case of "puncture of heart by foreign body;" case of "remarkable calcification of heart;" "irregular dentition, accompanied by malformation of the condyle of inferior maxilla;" case of "huge renal calculus;" "ulcerative disease of elbow-joint;" and so on. But I have named enough to show the range of our subjects, and that our meetings are practically useful in familiarising the eye and the mind with the changes in the animal system produced by disease.

While thus having shown the value of the actual work of the Association, we must not forget to remind ourselves of the fact, that we learn a vast amount in writing an essay. We examine works on the subject; we sift the views of the authors, and detect their fallacies; we make and record practical observations; we think out their application, and we reduce them all to due order. We then with a firm basis of fact submit our deductions to minds differently constituted from ours, whereby they are confirmed or shown to be erroneous. We have here all the elements of scientific research. We thus train ourselves for more enlarged labours, and the larger and more learned audience of the men of science in all lands, and in all ages, present and to come.

Nor are incentives to such exertions wanting in the programme of the society. A reference to the list of prizes will show you that while every attempt to forward the objects of the Association by means of an essay is acknowledged by a certificate superior to that of membership, those essays which are entitled especially to recognition receive on a handsome groundwork the special thanks of the Association; whilst the best essay of all read at the general meetings by a student member during each session is adjudged the "Association General Meeting Prize," which generally assumes a form useful to the practitioner, as surgical instruments or books of reference. Again the spirit of emulation should be prompted by the offer of the "Association Prize Medals," the value of which is greatly inhanced by the many years during which they have been awarded. The subject of an essay is announced at the first meeting of each session; the essays must be written as the "rules and regulations dictate." The last subject was "Eczema Epizootica." The Council of the Association, through me, wishes to express regret at the apathy displayed in this matter; no essay was forwarded in competition. The second medal is awarded to the preparer of the best specimen illustrating some stated part of the animal body. For last session the subject was "The Superficial Nerves and Muscles of the Face of the Horse," &c. Mr. William South was awarded the medal. The Council looks forward to a larger competition this year, not only in the production of papers at the general meetings, and the elaboration of essays, and specimens,

does the Association encourage the friendly rivalry of its members, but also every year there is a competition for the Spooner Gold Medal, valuable not only intrinsically, but also as being a tribute of respect to the memory of the late Principal of the Royal Veterinary College, and patron of your Association, whose talents will long be remembered, and whose loss will long be felt. The subjects of competition are all "such as relate to veterinary science," and the examination may be written, practical, or *vivâ voce*, as the Examiners decide. Last year six candidates presented themselves; they were examined on paper in anatomy, chemistry, and *vivâ voce* questions on veterinary surgery and medicine were submitted to them. The result as reported to the Council is:—

Mr. George Wartnaby . . Gold Medallist.
Mr. William Ashton Hancock Certificate of Merit.

"The Board of Examiners reports to the Council deficiency in anatomy and chemistry."

The administration of the Assocation as carried out by the Council has been displaying a necessary energy. From its members have been elected the several boards of examiners required for adjudication of the above prizes and awards. In addition its meetings have been numerous and well attended, and mainly directed to the reorganisation of the library, including the addition or replacement of many works. We have thus now at your disposal for reference, and as aids in research, a large number of valuable books, which a reference to the catalogue will show to amount to nearly 1400 volumes, while of these many serve to assist you in the acquirement of the most modern scientific views, others are records of the past, amongst which will be found several volumes of the 'Transactions' of the Association.

Mindful also of the value of current periodical literature, the Council has ordered that the following be obtained regularly, and be available for the use of all members:—*Veterinarian, Veterinary Journal, American Veterinary Review, Medical Examiner, Medical Times and Gazette, Lancet, Journal of Physiology.*

The system of use and of procuration, as also the library rules, you will find on our notice board. "The Council hopes that acknowledgment of its efforts in the revival of general use of the library will be manifested by general attention to the library rules and regulations." By resolution of the Council on the 14th November, 1877, Mr. J. H. Steel was elected to the then vacant post of secretary. By resolution of the Council on 20th of February, 1878, it was judged, "That for the encouragement of the members a list of honours and awards be forwarded for publication in the professional journals annually." At a meeting

on 19th of December, the rule imposing fines on students for non-attendance was rescinded, "the Council believing it preferable that the meetings depend for their success on their intrinsic value, and their appreciation by students."

These are some of the most important results bearing on the general conduct of the Association," of the expenditure of valuable time and labour by the gentlemen, members of the veterinary profession, who constitute the Council under the presidency of Professor Pritchard. We may remark that the number of meetings and the time they occupied far exceeded that which the rules of the Association prescribes.

Of new members, during the Session 1877-78, we enrolled twenty-three. Of members nine became fellows; from these five were considered deserving of the Honorary Fellowship, of whom Mr. George Wartnaby was awarded the "Association General Meetings Prize" for his essay on "Parasitic Bronchial Disease of Calves."

The attendance of members and visitors at the General meetings of the Association has been good. Nineteen members of the Association obtained the Diploma of the Royal College of Veterinary Surgeons during the last year.

The following gentlemen filled the post of student vice-presidents:—Messrs. Gibbings, W. Markham, Dudgeon, W. A. South, G. Wartnaby, N. Almond. This post being annual, we shall call upon you to elect successors to these gentlemen, or to re-elect, if you think proper, any who remain. We shall also be happy to receive names of gentlemen who will favour us with essays during the coming session. In all nineteen meetings of the Association were held during the Session 1877-78.

With memories of the past to crown our zeal, with hope for the future, and with certainty of practical and sound immediate benefit, we invite co-operation of members of all grades, and we invite strangers to enlist in our ranks. Let us not be behind hand in the race of science, let us think of those who have gone by, and of those who are to come, and by good sterling work, leave the Session 1878-79 marked with golden letters in the annals of the Association.

JOHN HENRY STEEL, *Secretary*.

The report was received by the meeting.

The President then distributed the prizes and awards which are mentioned in the report.

The President next delivered his introductory remarks for the session 1878-79, urging especially upon the students the value of the Society, as giving them an opportunity of practising the art of speaking in public.

The following gentlemen were then elected student vice-presidents for the session:—Messrs. D. Gregory, Almond, P. Mayor, Huband, Lepper, Rugg.

After the names of those gentlemen who were prepared to read essays at the general meetings had been received, it was announced that at the next meeting, on 22nd of October, Mr. Dixson, M.R.C.V.S., will read his essay on "Distemper as affecting the Dog." The meeting then terminated.

JOHN HENRY STEEL, *Secretary*.

FRESHMEN AT THE ROYAL VETERINARY COLLEGE.

THE following Freshmen have been admitted Students at the Royal Veterinary College:—

Mr. J. D. Armfield.
— J. S. Wheatcroft.
— T. G. Hewitt.
— E. Barber.
— J. H. Penhale.
— G. W. Roberts.
— T. C. Fletcher.
— J. A. Bown.
— J. Down.
— J. Penberthy.
— A. H. Waddell.
— C. E. Cockram.
— T. Pottinger.
— F. Glover.
— J. F. W. Stubbs.
— F. A. Cuthbert.
— H. H. Roberts.
— T. McGuinness.
— L. Murphy.
Mr. A. E. Richardson.
— W. F. Barrett.
— W. Davidson.
— A. C. Wild.
— E. W. Williams.
— J. Chaplin.
— J. R. Kinsey.
— H. C. Harrison.
— C. J. Humphrey.
— C. C. Clark.
— E. J. Richardson.
— A. Hassell.
— J. R. Watson.
— W. Smithers.
— F. Joslen.
— C. R. Houghton.
— J. T. Holmes.
— G. T. Aylmer.

Students eligible as competitors for the Scholarship.

Mr. Cockram.
— Pottinger.
Mr. Waddell.
— Davidson.

Students who passed the Matriculation Examination with distinction:—

Mr. Barrett.
— Fletcher.
— Glover.
— Joslen.
— Kinsey.
Mr. Harrison.
— Hassell.
— J. T. Holmes.
— Houghton.
— Wild.

SMITHFIELD CLUB.

At a Council meeting held October 1st, 1878, present: His Grace the Duke of Bedford (president) in the chair, the Right Hon. Lord Walsingham (vice-president), Messrs. Joseph Druce, C. Howard, R. Leeds, Edward Paddison, T. Pope, R. Garrett, E. Beck, F. Street, and B. T. Brandreth Gibbs, the honorary secretary,

The Council took into consideration whether the rules prohibiting animals exhibited at other shows after the 1st of November should be rescinded or not. A report from Professor Brown, the veterinary inspector to the Club, was read, also a communication from Professor Simonds, the hon. veterinary inspector. It was ultimately decided that these rules should not be rescinded for the present year. The following special rules therefore remain in force for the coming show—viz.

Rule 1.—That no animal (cattle, sheep, or pigs), exhibited at any other show after the 1st of November, 1878, be allowed to be exhibited at the Smithfield Club's Show this year.

Rule 2.—That each exhibitor be required to certify that any animal to be sent by him for exhibition at the Smithfield Club's Show this year has not been, and will not be, shown at any other exhibition after the 1st of November, 1878.

The Special Regulations 3 and 4 will also remain in force.

Rule 3.—That the Exhibitor shall send, with each animal, a certificate that it has not been, for fourteen days previous to its leaving home for the Smithfield Club's Show, in contact with any animal suffering from contagious or infectious disease. No animal will be admitted without this Certificate.

Rule 4.—That all animals undergo a veterinary examination previous to being admitted at the doors of the Agricultural Hall; and that suitable covering be constructed over the outer yard to enable this to be properly carried out.

B. T. Brandreth Gibbs, *Hon. Sec.*

LETTER FROM MR. HILL, M.R.C.V.S.

We have been requested by Mr. Hill to insert the following paragraph and letter which have appeared in the Wolverhampton papers:

"His Royal Highness the Prince of Wales has been graciously pleased to accept a copy of the work entitled 'Management and Diseases of the Dog,' by Mr. J. W. Hill, veterinary surgeon of

Wolverhampton. The following is a copy of the letter received by Mr. Hill in acknowledgment of the work:

"Abergeldie Castle, Ballater, N.B.,
"9th October, 1878.

"Sir,—I have had the honour of laying your letter of the 5th instant before the Prince of Wales, and I am desired, in reply, to convey to you the expression of His Royal Highness's thanks for the copy of your work on the 'Management and Diseases of the Dog,' which you have been so good as to transmit for his acceptance.

"I am, sir, your obedient servant,

"J. W. Hill, Esq. "Francis Knollys."

OBITUARY.

We have to record the death of Mr. Antony Adrian Smith, M.R.C.V.S., Melbourne, Australia. His diploma bears date April 17th, 1834.

Also Mr. Jas. Michael Rowell, M.R.C.V.S., of Melbourne. Diploma bears date June 12th, 1844.

And of Mr. David Young, M.R.C.V.S., Abergavenny, on the 30th September, in the 36th year of his age. Diploma dated April 24th, 1865.

The late Dr. Rowe.—Our readers who take an interest in helminthological inquiries relating to the welfare of stock, will regret to learn that the eminent Australian agriculturist and flock master, Dr. Rowe, is deceased. In the pages of *The Veterinarian* for September, 1873, and May, 1874, and also in some previous issues of this journal, copious extracts from Dr. Rowe's writings on parasitism are reprinted from the *Melbourne Leader*, and from other local papers. The lamented gentleman possessed an eminently practical mind; but desiring to free himself of the prejudices which too often prevent the agriculturist from availing himself of modern improvements he diligently sought to keep himself *au courant* with the latest discoveries in science, and by original observation and experiment succeeded in verifying many of the results that had already been arrived at. A great sufferer from losses of stock himself, he showed an unceasing anxiety to improve the conditions by which the unfortunate animals were surrounded—in this way striving not only to benefit himself and his neighbours, but also hoping at the same time to lessen the amount of animal misery occasioned by parasites. Besides the immense losses sustained from rot or fluke disease. Dr. Rowe assured us that some years back he lost *thousands of wethers* from hydatids.

The circumstances of Dr. Rowe's death are painfully interesting. On the 16th of last May, as we gather from the *Mansfield Guardian*, "the deceased went out to go his round through the paddocks at Seven Creeks, riding his customary

horse—a nasty, tricky, ill-tempered beast. He did not return at his usual hour for dinner, and after a time his family became uneasy, and a search was instituted and maintained without interruption during the night. About two o'clock the following morning, the mare he had been riding was found close to a fence. Soon after daybreak Mr. Frank Rowe, who, with Miss Rowe, had been driving round the paddocks in a buggy provided with blankets (in case their father had been injured) came on the body lying face downward. He was cold, and had apparently been dead for several hours. Over the right eye and down the right side of the face were bruises, blood having flowed freely from the nose, mouth, and right ear. The body was conveyed to the house, and on the following morning a magisterial inquiry was held, the above facts being then elicited. The funeral took place the same afternoon, when, in spite of the remarkably short notice, a very large number of persons congregated to follow the deceased to his last resting place in the cemetery at Euroa."

In respect to Dr. Rowe's great private worth the Victoria papers are unanimous. The *Guardian* remarks that he was a "truly good and generous man, high principled, public spirited, with a great desire to see this country prosper, and a great love for it. He assisted in the formation of all our early local institutions, and was the actual founder of our Hospital, in which he always felt the deepest interest, and with which his name will be ever associated."

In a similar strain a writer in the *Advertiser* says that Dr. Rowe was "a highly educated, cultured gentleman, full of generous impulses; liberal, high-minded, and honorable, and was loved and esteemed by all who knew him. During the greater part of his colonial career he was identified with pastoral pursuits, having for a long time resided in the Mansfield district, where, as the owner of Loyola, Killeen, and more particularly Mount Battery stations, he was well known, both as a breeder of stock and a man who not only built his own fortune, but was ever ready to help others to build up theirs. After selling the Mount Battery estate he took a trip to the old country, and on his return he purchased the Seven Creeks station near Euroa, where he lived up to the time of his sudden death."

To this account of Rowe's worth we may add our own testimony; for whilst in England he endeared himself to all who had the pleasure of making his acquaintance. He visited our hospitals, and other institutions, and even the class rooms of our colleges, taking his seat amongst the students as if he were one of themselves. In the entozoal department of the Museum of the Royal Veterinary College he recognised several of the specimens which he had himself contributed to the collection only a few years previously.

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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By John Henry Steel, Demonstrator of Anatomy at the Royal Veterinary College.

(*Continued from p.* 719.)

Summary.—From the *Recueil de Méd. Vét.*, 15th October, 1878, "Report of the Debate at the Congrès National Vétérinaire on the question of the best means of improving the position of private practitioners in France." Also, "On the Reform of Meat Inspection," by M. Bouley. From the *Annales de Médecine Vétérinaire*, November, 1878, "Award at the Great Exhibition of Paris;" also "Civil Decorations to Veterinary Inspectors." From the *Revue Vétérinaire*, "Case of Locomotor Ataxia in a dog; *post-mortem* appearances." From the *Gazette Hebdomadaire de Médecine et de Chirurgie*, "M. Colin's Communication to the Academy of Medicine on Intestinal Calculi in the Horse."

"The National Veterinary Congress has, we may truly say, answered all the hopes of those who originated it. All the questions of the programme drawn up by the committee have received elaborate discussion, during which the best feeling has always prevailed. The opinions were often expressed warmly, but always in order.

"Each sitting has numbered from 150 to 200 members present."

On the question of "the best means of improving the position of veterinary practitioners in France," the following remarks were made:

"*M. Tanguy, of Landerneau.*—Against this evil of empiricism a law could do nothing, and would be inopportune. Let justices of peace choose experts only among qualified men; let no proprietors who have suffered from epizootics receive indemnities except when they can prove that their animals have been treated by a veterinary surgeon (except when a distance of more than twenty-five kilometres prevents it). Thus more will be done against empiricism than would result from legal restrictions, which could hardly be rigidly enforced. We must wait for the time when the spread of knowledge will, in the ordinary course of things, extinguish empiricism.

"*M. Thierry, of Tonnerre* (Delegate of the Veterinary Society of the Yonne), does not believe in the efficacy of a law which, even in the case of human medicine, where higher interests are at stake, has failed to produce very marked results. The improvement of the position of veterinary practitioners cannot be complete until, by the gradual reform of ideas, we shall have attained the stage of only considering the value of the *man*, whatever his profession. The feeling of *caste* is still too prevalent in France; when it shall have been dispersed by the diffusion of liberal ideas, the veterinarian will be estimated by his science and by his usefulness, and will assume the position in society he deserves.

"*M. Parent, of Châlon-sur-Saône.*—It is not by a law but by the spread of instruction we must banish empiricism. Let teaching be free and obligatory, and let it be given by men having other qualifications than *lettres d'obédience*, and empiricism will cease to have any hold upon the mind. A study of the map of France, which indicates in tints the degree of popular instruction in various parts, shows the darkest tints in those parts where empiricism flourishes.

"*M. Boutet, of Chartres.*—The law would be only a snare, even if we could obtain it; which we shall not, for the tendency in the present day is to the abolition of privileges. Commercial liberty and the liberty of higher instruction have been voted; it is suggested to allow liberty of money assessment, and while this spirit predominates, we shall obtain no obstacle to the freedom of treatment of animals by what is considered the convenience of the employer. The law should be restrictive only in the case of contagious disorders, for here individual liberty is prejudicial to the public welfare. Here the profession may come to the

front. A good organisation of the sanitary service will do more for veterinarians than a law against empiricism. Empiricism will spontaneously fall to pieces when the law will reserve all sanitary action with regard to contagious disorders for qualified practitioners.

Against this current of ideas that of the partisans of a law which will forbid practice of veterinary medicine by persons unprovided with a diploma delivered by the schools was very strong.

"*M. Alasoniere, of Roche-sur-Yon,* demanded such a law for the restraint of the sorcery which flourishes in La Vendée, where most stupid superstitions prevail. But this would not alone place veterinarians in their true position. They must, above all, do much for themselves. Let them learn self respect, let them scrupulously perform their social duties, and they will do more by the dignity of their lives than could be done by a law to protect professional practice.

"*M. Rossignol, of Melun,* contended that a law serving to repress empiricism, even though it might not have all the efficacy many might wish, would have a beneficial moral effect in establishing a complete distinction between empirics and veterinarians, placing in this respect veterinary on a par with human medicine. The Congress would give much satisfaction to the large majority of veterinarians if it would give a note to this effect. We are assured of this by the correspondence which the Congress has occasioned with a great number of members of the profession.

"*M. Pichon, of Château Gontier,* as representative of the veterinarians of the West, states that in that part empiricism is flourishing; that in the eyes of the public the licence which the empirics have by purchase is considered as a diploma; and that, in contempt of the royal law of 1846, they keep and sell poisons. This condition of things, though illegal, receives sanction in a way from the commission charged with the inspection of pharmacies, for the establishments of veterinarians and empirics are alike inspected by them, and the former are thus placed on par with the latter. He advocates the procuration of a law against empiricism, but even if this cannot be obtained, and certainly until it has been obtained, the above abuses should be corrected, and the royal law of 1846 enforced, thus the action of empirics would be restrained in the sale of poisons, and consequently their general influence.

"*M. Quivogne,* in the name of his *confrères* of the Veterinary Society of Lyons and of the South-East, supported the legal measure suggested, and its being demanded by the

Congress not in the interests of the veterinary profession, which has no need to be protected, and which ought not to ask to be, but in the interests of the public, to whom empiricism is prejudicial by the evil it does, or which it allows ignorance to do, especially in the matter of contagious diseases.

"As things now exist, empirics have full license for evil, and, what is still worse, there is one department, that of Isère, where an empiric has been placed on the service of epizootics in the chief town of the canton. These facts ought to be brought under the notice of the government. Veterinarians ought to use all their influence, which is considerable, to obtain from the House the note of a law which will prevent empirics from doing all the evil which has been pointed out. At present veterinarians complain but do not *act;* the time has come for more active measures. In 1848 the Republican Government had prepared a well-matured scheme, which would have been efficacious; the *coup d'etat* prevented it from being placed before the National Assembly. Now the Republic again reigns this project ought to be revived, and in that direction veterinarians ought to turn their efforts in the name of public interests, against which empiricism is an always active danger.

"*M. Gridlet, of Toulouse,* considered a law which restrained empiricism would not be an unliberal law, for it is always a right and a duty for society to prevent evil. Empirics are harmful by their ignorance; this must be prevented. But it is not only empirics who are injurious to the profession. Many members of the profession do damage by the manner of their competition and by the means of advertisement to which they have recourse, and there are cases where this bad example is derived from authority. This regretable fact would be avoided if members of the teaching body remained in their high position and abstained from competition with private practitioners in the field of private practice.

M. Renaud, of Ablis (in practice in Paris), supported the idea that a law is necessary and its application possible to render it effectual throughout France. A measure which has been found effectual in Belgium ought to be adopted, the encouragement by pecuniary aid of veterinarians commencing practice in a hitherto unworked district. By giving a licence to empirics they are treated as though they belonged to a recognised profession. This abuse ought to be corrected, and it would be by a law which would forbid practice of veterinary medicine by men who are devoid of all professional

information, and who can do but the work of a charlatan, like the celebrated empiric of Orgères who is well known to M. Boutet, for he has long imposed upon the credulity of the public in his department.

"*M. Viseur, of Arras,* declared that all he had just heard and learned concerning the number of empirics and the range of their action confirmed in him the opinion that the value of a repressive law could be no longer doubtful. This law could not fail to meet with difficulties in application, nevertheless these difficulties, and they seem to be real, ought not to prevent the representatives of the profession from advising legal measures against a real evil. This ought to afford an opportunity of regulating on the frontier international relations with regard to veterinary practice. The law of Belgium prevents French practitioners from passing into that country, and the reverse condition not existing native practitioners on this frontier have to contend against their co-professionals of Belgium, as well as against empirics of each country.

"*M. Collin, of Vassy,* remarked that the army had become a sort of school for empiricism, whence came a great number of empirics now in practice, the more formidable since they plumed themselves on being the pupils of veterinary surgeons of the regiments with which they had served as farriers. The veterinary officers leave to their farriers too much action in the preparation and administration of medicine. Thus these men gain an initiation which they afterwards utilise in practice as empirics. This is a serious danger for the future of the profession, for unless it is attended to, the rule of obligatory service will compel *all* farriers to serve in the army, and thus, consequently, to become empirical practitioners."

A number of representatives signalised that they were delegated by societies and bodies of veterinary surgeons to endeavour to procure legislation to repress unqualified practitioners, by supporting any measure tending in this direction brought before the Congress.

"To summarise, from the many opinions expressed during the first and second sittings of the Congress, it was shown that empiricism, with the entire liberty it possesses in the present day, opposes the efforts of the State made in the maintenance and development of the veterinary schools, and prevents them from being duly productive in useful results, which would accrue if these legal restrictions reserved the practice of the veterinary profession for pupils of those schools. On the question of the damage which empiricism

causes to the public interests there was complete agreement; difference of opinion only commenced when the remedies for the evil were treated. To spread education in all layers of society, to reserve to qualified practitioners all official posts which Government or corporations have to confer, to demand the rigorous application of the rules and laws which concern the possession and sale of poisons, such are the measures which seemed advisable to those members of the congress who would not allow that a law repressive of empiricism is possible, and could be efficacious.

"But its possibility is proved by experiments made in neighbouring countries, especially Belgium and Switzerland, and from these we learn that if the efficacy of the law is not absolute, it has had the effect of removing from empiricism the character of a profession sanctioned by law (since that which is not forbidden is permitted) and by the fact of its being patentable. Even though the law had no other effect than the establishment of a complete distinction between the profession of a veterinarian and the trade of an empiric, in the gradual extinction of empiricism its effect would be considerable, because it would turn away from the trade, it having become illicit, a number of men at present practising. Without doubt, too, if the law once placed a veto on empiricism the veterinary schools would find a number of sons of empirics and farriers coming to them, who in the ordinary course of things content themselves with instruction received from their fathers. When empiricism is no longer legal, it will cease of its own accord."

M. Bouley has recently been engaged in connection with a case where a farmer in good position appealed against a decision punishing him for sending to the market a carcase unfit for human food. Evidence showed the following facts of the case:—The animal escaped from its stall, rushed madly about until it fell from exhaustion, when the owner cut its throat and sent for a butcher to dress it, which he did not do until four hours after. This was on the twenty-seventh day of the month. It was at once sent off to Paris; fifty hours elapsed before it was seized and condemned by the inspector, who reported, "The meat is flabby and excessively soft. All the interior was livid, cadaverous; the pleura and peritoneum inflamed, the meat on section of an earthy colour, as though cooked, and the feint of bleeding which had been made had only been performed after death." On this basis the meat was condemned as from an animal affected with disease.

M. Bouley argues that the escape of the animal showed

that it was in exuberant health, and so was enabled to continue its mad course until it was exhausted and in danger of asphyxia. If it had been affected with pleuritis and peritonitis it would not have been much inclined to perform in this way. The inspector therefore perverted the *post-mortem* appearances. "The animal therefore did not die from disease; he died from abuse which he made of the forces stored up, which he had no right to expend, his destination for feeding purposes being opposed to any tendency to great exertion." The evidence leaves no doubt of the unfitness of the meat for human food. But many conditions led to this: the bodies of animals hunted to death decompose rapidly; the intestines remained too long in the body after death. But the owner was unaware that these circumstances are prejudicial to the preservation of the meat, and therefore cannot be held responsible; also the time during which the meat was kept was remarkable for high temperature and moist weather. The point affirmed by the inspector, that the feint of bleeding had been made after death, is by no means proved; it is only a statement. The bleeding was not so complete as usual, no doubt; but "the English do not bleed their animals so much at slaughter as we do. They, on the contrary, take care immediately after the slaughter to introduce a bar of iron into the spinal canal to destroy the spinal marrow, and cause cessation of the heart's beats. Thus more blood remains in the flesh, which is, therefore, more juicy and more nutritious. This practice has only one inconvenience, if it is one—the meat remains darker in colour, and so differs from the *exsanguinified* meat of our slaughter-houses, and probably when subjected to a high temperature will not so long resist decomposition." The history of the case would account for congestion of the pleura and peritoneum.

The Court found in favour of the plaintiff on this evidence in the case of appeal.

M. Bouley brought this case under the notice of the Academy of Medicine, and was pressed to give the question of the necessity for competent inspectors the form of a distinct proposition—he did so and his remarks are interesting. "The proposition of M. Bergeron seems to me to be excellent, and I am quite ready to bring it under the notice of the Academy in the form of a proposition requiring investigation. All desirable guarantees would be given to the public hygiene and to the producers of meat if its inspection were confided to men who possess knowledge both practical and scientific, to veterinarians who have undergone the necessary course of

instruction. Thanks to the liberality of the government the staff for veterinary instruction has been recently enlarged by the institution, of two new chairs in each school to one of which is appointed a special course on "Inspection of Butcher's Meat," to consist of oral and experimental instruction. Thus veterinarians emanating each year from the schools will be competent to fill the posts of inspectors in municipalities, giving every guarantee of fair play to the public, to producers and to justice. Already the post of inspector is well filled in some towns by veterinarians. Bordeaux happily referred the appointment of inspector to a committee, which named to that post a competent man, *M. Baillet,* brother of the Director of the Veterinary School of Toulouse—who has availed himself of this post to obtain importantinformation in pathology and pathological anatomy, and has already given to science, a valuable work on "Inspection of Meat." In Paris, a certain number of veterinary surgeons are inspectors, but they do not seem to me to have the proper position and influence which their studies should insure for them. As much as possible these posts should be given to veterinarians; the veterinary congress which has recently been held in Paris has expressed an opinion in this matter similar to mine, and we may hope for the sake of the public that future efforts will realise this result. A few more words before I finish—M. Hillairet, has indicated an abuse which has been and is too often committed, the sending to the markets of large towns the meat of animals affected with Charbon, which have been slaughtered when the premonitory conditions of the disease announce an imminent loss to the farmer. This is due to the still more regrettable fact that in France there is no well organized sanitary service with clearly defined functions. But this state of things is ceasing; a scheme of legislation on "The Organization of a Veterinary Sanitary Service" has been prepared by the consulting committee on epizootics. This has been submitted to the state council, and has been adopted with some modifications which it seemed to require and will be presented to the House when it again sits. As soon as a veterinary sanitary service shall have been instituted in France on the principles now to be brought before the House the abuses pointed out by M. Hillairet, will be no longer possible, for the sale of meat will be no longer possible without a warrant from the sanitary officers!

Locomotor Ataxia in a Dog.—From the *Revue Vétérinaire de Toulouse,* by M. Mauri.

The patient was eight months old; the disease essentially

characterised by complete or incomplete loss of motor co-ordination, was strikingly shown; the limbs, instead of moving in the axis of the body, were drawn outwards or inwards and forcibly forwards or backwards, and hit against each other, making progression slow and laborious in spite of the efforts of the animal to follow its master. The animal frequently fell, and then the limbs were agitated in every direction, preventing the patient from rising without assistance. Sensation and motion were preserved; co-ordination only was affected. Though all the other functions of the patient seemed to be performed regularly, it became gradually extremely thin, and was destroyed by bleeding. At autopsy, "proceeding with care to expose the brain and spinal marrow, as well as the interior of the cranium and of the spinal canal, we found that the odontoid ligament, which is usually formed by a strong fibrous band of a triangular form, becoming continuous behind with the superior vertebral ligament, was ruptured, being represented only by some curled-up remains. The odontoid process was considerably raised. The spinal marrow in this position was diseased. The pia mater much injected, in the form of a triangular patch, about three centimétres in length, with its base directed forwards. The dura mater thickened and hardened, in the form of a triangular patch, directed transversely, very concave inferiorly. This corresponded to the odontoid process; set free by rupture of its ligament and constantly rubbing against the membrane, this caused increase of thickness, and also exerted more or less strong pressure on the spinal marrow at its origin."

The following news from the *Annales de Médecine Vétérinaire*, of Brussels, will be interesting to some of us:—

"One veterinary practitioner only has obtained an award for exhibition of objects of art at the Great International Exhibition. M. Contamine, government veterinary surgeon at Perumelz, has been awarded a bronze medal for his numerous and remarkable collection of shoes and *orthozomes* for horses, asses, mules, and oxen. The new "roughed shoe" of our honoured countryman and fellow-practitioner, was above all others an object of favourable notice." "By a decree of 10th October, 1878, wishing to acknowledge the services of the veterinarians called by the government in 1870-71, on the emergency of Cattle Plague, in executing and superintending the measures prescribed in prevention of an invasion and in forestalling the development of the epizootic, His Royal Highness the King of the Belgians has been good enough to confer the *Civic Knighthood of the first*

class on four veterinary officers; of the *second class* on six, and the *first-class medal* on three." We may contrast this with a somewhat similar condition existing in England. An outbreak of the cattle plague occurred not very long ago; it appeared in several parts of the country, extra measures of inspection were resorted to, the invasion was checked, and the veterinary surgeons who had performed this good service to the public remained without any public acknowledgment of the value of their services, and without any distribution of awards, either to the administrative or executive branches of this inspecting service which had so well performed its duties. History repeats itself; the same results followed the outbreaks of 1865 and 1872!

At the Academy of Medicine meeting of the 22nd October, 1878, "M. COLIN drew attention to some conclusions as to the seat and mode of formation of intestinal calculi in horses, and presented some specimens. He endeavours to establish—(1) That intestinal calculi of the horse and of other solipeds, instead of originating, as has been hitherto supposed, in different parts of the intestinal tube are produced in one constant position; (2) that it is by leaving that point where their sojourn can be prolonged without serious inconvenience that they cause frequently fatal attacks of colic. The defined region in which these are developed has received several names, as gastric, diaphragmatic, or gastro-diaphragmatic flexure. These are the principal reasons for this speciality of place of origination:—1st. It is inferiorly placed, being situated near the xiphoid appendage of the sternum, and hence on the lowest level of the abdomen. The calculi, remain there in consequence of their being always more heavy than water. 2nd. It is so large that the concretions may there attain a considerable size without blocking the passage through the canal. This size also allows the existence of many calculi provided they do not exceed a certain bulk. 3rd. It is there that all foreign bodies introduced with water or with food accumulate and are arrested, as earth, sand, gravel, stones, pins, nails, portions of teeth, and other substances, whose mass frequently gives a weight of many kilogrammes; also we know that one of the conditions essential to the development of *Enterolithes* is the presence of a foreign body as a nucleus. M. Cloquet pointed this out with regard to the calculi of man—it is not less essential for those of horses. 4. In that dilatation also the intestinal fluids, concentrated by removal of water by absorption, are most charged with salines, especially phosphate of lime and magnesia, and notably if the animals receive large feeds of bran,

oats, or other grain food. There fermentation of the residues of digestion gives a large quantity of ammoniacal product, which in the nascent state combines with the phosphates and converts them into double salts, as Fourcroy and Vanquelin showed a long time ago, and MM. Wurtz and Berthelot have more recently proved.

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(*Continued from p.* 723.)

THE APIACEÆ of Professor Lindley—UMBELLIFERÆ of most authors—is one of the largest and most important of the natural orders into which plants have been divided. It is said to number nearly 300 genera, containing as many as 1500 species.

The umbellate family is much distributed all over the globe, though sparsely so in the extreme north. We have as many as thirty-eight native genera, which are arranged in no less than seventy-six species; and though few of these present us with plants of the size they attain in the tropics, our native forms are greatly varied in structure, form, and qualities. For the first of these statements we have only to observe the small but interesting penny-wort, the highly-coloured eringo, and one of our largest forms, the cow-parsnip, which, however, is but a pigmy in size when compared with the exotic species of Heracleum, which have leaves over six feet in length.

The specific details of the order are of great interest, as, although it is a very natural one, yet it has puzzled most botanists to arrange its genera and species upon definite distinguishing characters.

There is, however, one distinction which mostly prevails—the flower stalks radiate from a common centre or umbo, like rays or spokes around the nut of a wheel.

Professor Lindley describes the order as follows:

"Flowers in umbels, white, pink, yellow, or blue, generally surrounded by an involucre. Calyx superior, either entire or five-toothed. Petals five, inserted on the outside of a fleshy, epigynous disc, usually inflexed at the point; æstivation imbricate, rarely valvate. Stamens five, alternate with the petals, incurved in æstivation. Ovary inferior, two-celled, with solitary pendulous ovules, crowned by a double

fleshy disc; styles two, distinct; stigmas simple. Fruit consisting of two carpels, separable from a common axis, to which they adhere by their face (the commissure); each carpel traversed by elevated ridges, of which five are primary, and four, alternating with them, secondary; the ridges are separated by channels, below which are often placed in the substance of the pericarp, certain linear receptacles of coloured oily matter called vittæ. Seed pendulous, usually adhering inseparably to the pericarp, rarely loose; embryo minute, at the base of abundant horny albumen; radicle pointing to the hilum."*

The stems of these plants are nearly always fistular, the tubes being separated into joints at nodes, whence the leaves issue, and so large are some of these tubes, even in our native species, that, as a boy, we have successfully used them for panpipes, and even for flutes.

The order is well described in the 'Treasury of Botany,' a work which ought to be in the hands of every lover of plants:

"UMBELLIFERÆ (APIACEÆ).

"This is one of the most natural, and, consequently, one of the most easily recognised of the orders of plants, but one of the most difficult to divide into well-defined genera. It consists of herbs, often strongly scented, with small flowers, usually in a simple or compound umbel, which has given the name to the order, although this umbel is sometimes contracted into a dense head, while in a very few species this normal inflorescence is departed from.

"The ovary is two-celled, with a single pendulous ovule in each cell, and is crowned by two styles on the top of the disc.

"The fruit always separates into two dry, one-seeded carpels or mericarps, resembling seeds, as they are popularly but erroneously called. The real seed is inside, closely adhering to the outer pericarp; it has a minute embryo in the base of the horny albumen.

"The mericarps are furnished with a definite number of raised longitudinal ribs, and underneath the intervening channels are frequently placed elongated receptacles for essential oil, called vittæ, remarkably constant in each species in their number and position.

"It is chiefly from the arrangement of these ribs and vittæ and from the shape of the enclosed albumen that modern botanists have derived the characters by which the numerous genera of *Umbelliferæ* are distinguished.

* 'Vegetable Kingdom,' p. 773.

"Though mostly herbs, these plants sometimes attain gigantic size, as in some species of *Heracleum* and the *Angelica* of Kamtschatka.

"Dr. Welwitsch, moreover, mentions having found in tropical Africa, in the region of Golungo Alto, an arboreous umbellifer with a stem one to one and a half foot thick, which is highly prized by the natives for its medicinal properties and its value as a timber tree. This, so far as is at present known, is the most gigantic plant of the order."*

Lately the gardeners of large gardens seem to have delighted in showing some of the magnates of the Umbellates in cultivation, some of the finest of which may be seen at the Botanical Society's Garden.

The order is well known for producing many active medicinal plants, some of which are so powerful as to possess highly poisonous principles. One species supplies a gum resin so offensive in its scent as to be considered the beau ideal of nastiness, so that the Germans call it "Teufelsdreck"—*Stercus diaboli*—literally, Devil's dung. Some species supply us with essential oils, such as the caraway and the anise, whilst a large section are used as vegetable esculents, amongst which latter we would now especially mention the parsnip and carrot.

At one time it was generally considered that all the plants which we use as food were originally created in the forms in which they have become useful to mankind, some people even going so far as to suppose that they formed objects of care and attention of Adam in the Garden of Eden; but the few people who have worked at the matter experimentally, or who have seriously thought upon the subject, have arrived at the conclusion that those plants which we cultivate for their roots were not naturally endowed with the root portion of their structure, either of the size or form which would be considered as essential for a perfect crop plant. Thus the parsnip, carrot, turnip, beet, &c., as we find them in nature, have nowhere the large, fleshy, smooth appearance which belongs to their cultivated forms, and hence all the varieties of these that we meet with in cultivation must be considered as *derivatives* from original wild forms obtained by *cultivative processes;* that is, collecting their seed, planting it in a prepared bed, stimulating the growth of the plants with manures, thinning, regulating, weeding, and such other acts as constitute farming or gardening, as the case may be. Hence, then, it is concluded that such plants as are grown for their roots have a peculiar aptitude for laying

* 'Treasury of Botany,' 1189-10.

on tissue, and thus increasing the bulk of their "descending axis;" that is, that portion of their structure which grows downwards—root. Besides this, they are remarkable for their capability of producing varieties—a fact which, united with a constancy in the maintenance of an induced form, renders it exceedingly easy to bring out new sorts, which will maintain their characteristics under great diversities of climate, soil, and treatment.

The facility with which different sorts of roots may be procured can readily be understood from the many varieties, not only of *turnip*—which may, perhaps, be considered as an original species—but also of swede, which is the hybrid of the turnip and rape plant. Of the former we have more than thirty sorts grown by the farmer, and as many peculiar to the garden; whilst there are probably more than twenty well-recognised sorts of swedes. Of parsnips we have fewer varieties, to which may now be added the new form called the student parsnip, the growth of which is so interesting that we shall here give a short history of its production, as an illustration of the origin of root crops.

In 1847 we collected some wild parsnip seed from the top of the Cotteswolds, where this is this is among the most frequent of weeds. This seed, after having been kept carefully during the winter, was sown in a prepared bed in the spring of 1848 in drills about eighteen inches apart. As the plants grew they were duly thinned out, leaving for the crop, as far as it could be done, the specimens that had leaves with the broadest divisions, lightest colour, and fewest hairs.

As cultivated parsnips offer a curious contrast with the wild specimens in these respects, we place the following notes side by side on the root leaves of plants of the same period of growth:

1st—Wild Parsnip.	Ft.	In.	2nd.—Student Parsnip.	Ft.	In.
Whole length from the base of the petiole to the apex of the leaf . . .	0	8	Whole length from the base of the petiole to the tip of the leaf	2	0
Breadth of leaflets . .	0	$0\frac{3}{4}$	Breadth of leaflets . .	3	$0\frac{1}{4}$
Length of ditto . . .	0	1	Length of leaflets . .	0	$6\frac{1}{2}$
Petiole and leaflets, hairy. Colour dark green.			Petiole and leaflets without hair. Colour light green.		

We have before remarked that neither in size nor form are the wild roots at all comparable with the cultivated ones. Our figures were taken from fine roots of the wild parsnip of the first year's growth; that is to say, just at the same time as a crop parsnip would be at its best. They were purposely

taken from the specimens obtained from the same district as the seed with which our experiments were commenced; they were very sticky and forked. Our first crop of roots from the wild seed presented great diversities in shape, being for the most part even more forked than the originals, but still with a general tendency to fleshiness. Of these, the best shaped were reserved for seeding; and having been kept the greater part of the winter in sand, some six of the best were planted in another plot for seed. The seed, then, of 1849 was sown in the spring of 1850, in a freshly-prepared bed, the plants being treated as before, the results showing a decided improvement, with tendencies, in some examples, in the following directions:

1st. The round-topped long root having a resemblance to the Guernsey parsnip (*Panais long* of the French).

2nd. The hollow-crowned long root, "hollow-headed" of the gardener (*Panais Lisbonais* type).

3rd. The short, thick, turnip-shaped root, "turnip-rooted" of the gardener (*Panais rond* form).

These three forms were all of them much misshapen, with forced roots—that is, *fingers and toes:* but still each of them offered opportunities of procuring three original varieties from this new source.

As an example of progress we may direct attention to a fine market parsnip.

At this time our stock was for the most part fleshy and soft on boiling; the flavour, too, though much stronger than that of the usual esculent parsnip, was rather agreeable than otherwise. This matter of flavour is a subject of interest, as most lovers of the parsnip, as a garden esculent, had got to complain of this root becoming more and more tasteless. That this was so our own experience most fully confirms; we have now, however, mended this root very materially in this respect.

Our experiments were only carried on with examples of the hollow-crowned form, which, following out from year to year, we at length obtained so perfect in form, clean in outline, delicate in skin, and unexceptionable in flavour, that we were induced to cause its seed to be distributed through the medium of the trade.

In 1861 we sowed a parcel of seed in our own garden obtained from the Messrs. Sutton, after having received from them the following notes upon the growth of the roots in their grounds:

"We are happy to tell you that, in lifting some of each of all the varieties of parsnips in our trial-ground, your

'Student' was decidedly the best shape, varying in length, but always clean and straight."

Since 1861 the student parsnip has held its place as one of the best in the market; it its however, increasing in size, as we have this year sent samples to the Reading Root Show as much as eighteen inches in circumference; but, as a rule, the root is of medium size, in which shape it has most flavour.

It took the first prize for parsnips at the International Show, at the Horticultural Society's Gardens in 1862.

These facts show how easy it is, by care in selection, to breed—so to speak—certain qualities in roots; while, at the same time, they convince us that cultivated plants have been grown in the form in which we meet with them by the exercise of care and skill in their cultivation.

The *Daucus maritimus* would, from experiments now in progress, seem to be the parent of our esculent carrot; for some time we tried the *D. corota*, the inland species, in order to make a cultivated form, but without success; we are, however, more fortunate with the sea-side form, as at present we possess respectable and edible carrots after two years' cultivation. The fact that so many of our esculents should be derived from plants from the sea-side is very significant, as showing that a new set of circumstances have given their impetus in bringing about great changes of form.

Both parsnips and carrots are recognised as good for feeding purposes; horses and cattle are particularly fond of them; and though they do not rank high as nutritive roots, they yet aid in moistening dry food, and, besides, they doubtless act as antiscorbutics, being of great service in preventing that irritability of skin to which highly-fed animals are so liable.

The other vegetable and medicinal forms of the order will be described in our next.

A FEW REMARKS ON PARTURIENT APOPLEXY.

By A. H. Santy, F.R.C.V.S.

There has at different times been a great deal written on the above subject; my object, however, in addressing you is not to bring before the profession any new method of combating the disease in particular, but principally to advise or suggest a mode of treatment prior to parturition as a preventive. Since my residence in Norwich I have been

much annoyed at the great fatality this disease has caused in certain dairies. The breeds most subject to it, as far as I can judge, are the Alderney, pure and crosses, and the Norfolk polled red. About two years since, a client of mine had, within twelve months, no less than six cases of genuine parturient apoplexy, not simple paralysis after calving, which is quite a different thing. A brother M.R.C.V.S., in talking to me a short time since about the disease, informed me that a client of his said, "How do you account for the greater part of your cases of parturient apoplexy (or, as it is commonly called, "milk fever") dying, or the animal having to be killed, whilst at my home-farm, some miles on the other side of the county, my veterinary attendant (a non-qualified man) always gets them up." My friend replied that he could account for it in no other way than that the cases had been misrepresented—that, in fact, they were not cases of parturient apoplexy, but simply of paralysis attending on parturition, which in nine cases out of ten is a simple affair.

I treated the six cases previously referred to with varied success. Two out of the six quite recovered; the others died. The first animal was quite insensible for forty-eight hours, and then became conscious and convalescent, with the exception of inability to rise caused by breaking the head of the femur in her attempts to get up in the half-comatose condition. She was, therefore, obliged to be killed. My client was naturally very anxious, and thought the disease must be infectious. I assured him it could not be, and had my opinion confirmed by a learned professor. Every kind of preventive treatment was tried until I mentioned the circumstance to Mr. W. Shipley, M.R.C.V.S., of Great Yarmouth, who asked me had I tried bleeding. I replied, not of late years. He said he rarely or never had a case of apoplexy which had been bled prior to calving. I at once advised my client to have every cow bled a day or two before calving, and at the same time to give a dose of aperient medicine. He has not had one cow down since.

Another instance this year. A dairyman in Norwich had four cases in a month, three fatal, one recovered. I obtained the owner's consent to bleed the rest at the proper time; two or three have calved since, and not a symptom of the disease. I cannot call to mind any one instance of a fatal result of parturient apoplexy occurring where the animal has been properly bled previous to calving. It cannot do harm, as far as I can see. It may hasten the period of parturition a few hours or a day.

As regards the treatment of the disease I have little to say.

If I caught the animal in the first stage I would bleed largely, and give a powerful aperient with stomachics and ammonia in some form, and try and produce diaphoresis. I have frequently noticed that after the administration of any medicine the animal shortly becomes comatose, although appearing but a slight case at first. Any excitement aggravates the symptoms; in my opinion there are scores of cases killed by the administration of medicine by the mouth when in this condition. I believe that a far greater number of cases would recover if no medicinal treatment was pursued, when the animal is once unconscious.

Attend to the patient's comforts by keeping her in a proper position, &c.; keep the skin warm; see to the withdrawal of the secretions of the milk and urine; evacuate the rectum and give injections, medicated or otherwise; carefully watch the rumen, and if it becomes distended puncture it, and wait patiently the results.

REMARKS ON FIRING.

By R. H. Dyer, M.R.C.V.S., Limerick.

Mr. Gresswell having, in the *Veterinarian* for last month, made some observations in reference to expressions which fell from me in a former number upon this subject, I would merely remind that gentleman that, although I did not allude to the use of chloroform in the performance of operations, I was not oblivious to the fact of it being employed by some practitioners, and also from the further fact that occasionally I have had recourse to it.

My principal object in penning these remarks—if memory serves me, for I write now from memory—was to show up a certain class of men, who make it a rule to perform the operation of firing in every case which is presented, not because they believe it to be the best remedy for certain maladies, but because they make sure of a good fee for the performance of it. And, moreover, my experience has taught me that many men who practice in our profession are ignorant of much they ought to know.

If a practitioner can produce results satisfactory in every way without the employment of the actual cautery, I think he is justified in forming an opinion adverse to it.

It is a common practice in this country to fire in all cases of lameness, especially if bony deposits are supposed to be

the cause of lameness. There was a time when I did the same. Firing has had its adherents pretty much in the same manner that venesection had its votaries. There was a time when all horses were bled if suffering from colic, as well as for almost every complaint that the animal was prone to.

I know that there is a fashion in practice, both in the human and brute creation, and that as we progress in medical science we set aside many of those things which we formerly adhered to.

A correspondent in the *Field*, this week, who states that he has been a horse-doctor for twenty-five years, has been told by the chemist that he cannot employ poisons in his practice because he is not qualified. He says, "How can I treat colic when opium is a poison?"

If that man knew a little more of therapeutics than I suppose he does, he could cure almost every ordinary case of colic without the use of opium. The same remark may be made in reference to lameness.

If we knew something more of cause and effect we might, I feel assured, use the firing iron less than some of us have done.

This day I was called to a case, the property of a nobleman. The patient had been lame off and on for a long time. I was asked by his lordship if the back sinews had not given way? My reply was that nodes were present upon the metacarpal bones, and that the lameness was the result of their existence.

This animal had been fired *twice* by a practitioner of good standing in the profession, and who boasts that he never throws a horse down for the operation.

I need say but little about this practice because every man with a grain of sense must know how inefficiently many cases can be fired while the horse is standing. Chloroform, as a matter of course, is not employed in such instances.

There are some men in this country who have the happy knack of throwing dust into the eyes of their clients. Having known the English mode of practice, and having been acquainted with a great many veterinarians during the few years I was hon. secretary and treasurer of the Veterinary Medical Association for the Western Counties of England, I had ample opportunity of knowing much that was going on, and I do not hesitate to declare that the English veterinary surgeons, as a body, are far superior to those in Ireland. As regards one or two operations, such as orchotomy and firing, I think Irish veterinary surgeons are equal, if not superior, to many I have met with; but, take them as *general* practitioners, and Englishmen must have the preference. If we take into

consideration cattle practice, the Irish veterinary surgeons are nowhere. It, however, is no fault of theirs, because they are seldom called upon to act in this way. One or two facts may afford some idea of this. We have in this country about a hundred members of the College of Veterinary Surgeons, and in Yorkshire, Lancashire, and Middlesex there are half as many more in each county. In Scotland there are, I believe, treble the number of men than in Ireland. This fact speaks volumes.

I have been digressing. I would remind Mr. Gresswell that I have no doubt of the efficacy of firing in some cases; at the same time I can assure him that nineteen cases out of twenty can be cured without the actual cautery.

CRUELTY TO ANIMALS.

By A. E. Macgillivray, Banff, N.B.

I am compelled to ask space for a few remarks on Mr Dyer's extraordinary note in last *Veterinarian*.

I am certain no part of my previous article on the above topic could afford Mr. Dyer the least iota of cause to suppose that I attributed, either directly or indirectly, anything in the shape of falsehood to his very condemnatory remarks in the *Veterinarian* of August last. At any rate I can safely say, that I had never the most remote intention of committing any such flagrant breach of literary etiquette.

I merely expressed my candid opinion that true champignon or scirrhous cord was never seen or found very shortly after castration, and I still maintain that this is the fact; and I am surely justified in stating such to be my opinion (although contrary to Mr. Dyer's ideas) without imputing falsehood to him!

Further, I still hold it to be extreme "cruelty to animals" to excise these enlargements, either hard or soft, which *so often* occur as proximate results of castration, scirrhous cord being a remote and *rare* sequel of that operation.

I deny, therefore, ever having impeached Mr. Dyer's veracity, and so consider no apology necessary.

It is a curious circumstance that Mr. Dyer's whole aim seems to be to find fault with the doings of his professional and non-professional confrères; one veterinary surgeon he accuses of *kicking horses in the belly* during examination for soundness; another he condemns for *galloping* unseasoned horses during trial for soundness; a third (or more) he says did not *fire* properly or with success, while he (Mr. Dyer)

refired same patients with perfect success; and, finally, a veterinary surgeon, who condemned a horse for spavins, was either *a fool, or a rogue, or perhaps a little of both.*

Now, I beg to submit that a person who can animadvert as above as to his professional brethren has extremely little room to quarrel with me merely because I happen to differ with him as to whether a certain intra-scrotal enlargement be true or spurious champignon.

I always have considered articles appearing in the *Veterinarian* subject to all fair criticism, and it will not be such puerile remarks as those of Mr. Dyer's that will prevent me (with the Editor's permission) from expressing my approval or condemnation of such when I consider it necessary.

THE FLEMING TESTIMONIAL.

To the Editors of the Veterinarian.

GENTLEMEN,—Nine months have elapsed since the meeting, in London, of members of the profession to inaugurate a fund for the especial purpose of presenting Mr. George Fleming with a testimonial in acknowledgment of his eminent services rendered to the veterinary profession as an author and an indefatigable worker in things pertaining to the welfare of our calling.

I should be sorry to charge the committee elected at the original meeting held in Red Lion Square or any member of it with being intentionally inactive, but I do really think the time has arrived when we should bestir ourselves to consummate the project evolved on the occasion alluded to.

It will be known to the Secretary of the Central Committee that the provincial associations have taken the matter up—indeed, the secretaries of two of the provincial committees have conferred with him on the subject—and the subscriptions, paid and promised, amount to a considerable sum. Now, as provincials, and not being the originators of the testimonial, we are anxiously awaiting, before adding our quota to the original fund, the intentions of the central committee with respect to how, when, and where the testimonial will be presented.

A great number of subscribers in the northern counties wish for a speedy decision upon the points referred to, and I would respectfully suggest that those who are supposed to take the initiative would exert themselves to accelerate the completion of the object in view.

It may be urged that enough time has not been allowed for thorough circulation of the matter, but as the "fund advertisement" has been conspicuous by its absence from both our professional journals for the last four months, it would appear that those at head-quarters are of an adverse opinion.

Our profession has, indeed, lapsed into a deplorable state of selfishness and want of appreciation if in nine months' time it cannot be roused to acknowledge, in a tangible form, the prodigious works of a man whose whole life has been nobly devoted to his profession's cause.

In conclusion, I would suggestively add that, prior to any decision being arrived at as to the form the testimonial should take, it might be advisable for a deputation to wait upon Mr. Feming, in order to ascertain privately his preference, if any.

I am, Gentlemen, your obedient servant,
W. A. Taylor, F.R.C.V.S.

EVIDENCE IN HORSE CASES—DIFFERENCE OF OPINION.

London; *Nov. 2nd*, 1878.

The enclosed, I think, will appear to you of sufficient interest to be inserted in your valuable Journal, as it may serve as a warning to the public in the matter of purchasing horses. It is a verified report, of course much abbreviated, of the trial in question. Yours, &c.,
"Observer."

To the Editors of the 'Veterinarian.'

In the case of Harris *v.* Jacobson, tried at the Lord Mayor's Court, Guildhall, on the 18th ult., the warranty of a horse being the point in dispute, a remarkable difference of opinion was expressed by the veterinary surgeons who gave evidence as to the time a disease known as "curb" had existed.

The plaintiff, it appeared, had purchased of defendant a horse with a warranty of soundness on the 14th of August, and found in a few days afterwards that the animal went lame from what was alleged to be a disease of some standing. On his behalf were called Mr. T. A. Dollar, of New Bond Street (who described himself as Veterinary Surgeon to the Prince of Wales, but afterwards admitted that he was not a member

of any college), Professor Pritchard, of the Royal Veterinary College, and Mr. G. South, M.R.C.V.S., all of whom had examined the animal in question within fifteen days of its purchase by the plaintiff, and were of opinion that the horse was unsound from a curb in the hock, which must have existed at least a month. They considered that the curb was probably of a still earlier formation, as from the appearance of the part they were convinced that the animal had been blistered for it. It was impossible, therefore, for the horse to have been sound at the time of sale.

For the defendant (who stated that the horse was sound and had no curb when he sold it), Mr. A. Farrow, M.R.C.V.S., and Mr. G. Chesterman, M.R.C.V.S., were called, and gave it as their opinion that the horse was sound at the time of sale, and that the curb must have been thrown out afterwards. It was only imagination, Mr. Farrow stated, to suppose that after a week any one could tell how long a curb had existed; and Mr. Chesterman could not agree with the witnesses on the other side that the symptoms indicated the existence of the curb before the 14th of August.

After hearing other evidence of an equally contradictory nature, the jury retired, but were eventually discharged, not being able to agree to a verdict.

Pathological Contributions.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of October, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise:—

SCHEDULED COUNTRIES.

Ports in Scheduled Countries from which brought.	Ports in Great Britain to which brought.	Disease.	Diseased Animals. Number of Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.	Healthy Animals.* Number of Healthy Animals brought in the same Vessels with Diseased Animals. Cattle.	Sheep.	Goats.	Swine.	Total.	Disposal.
Amsterdam .	London . .	Foot-and-mouth	...	78	...	...	78	Slaughtered under the instructions of the Privy Council.	279	14485	...	563	15327	Slaughtered under the instructions of the Privy Council.
Bremen . .	„ . .	Sheep-scab .	...	145	...	...	145	Ditto	...	3249	...	...	3249	Ditto
Harlingen .	„ . .	Foot-and-mouth	...	3	...	...	3	Ditto	36	698	...	264	998	Ditto
Rotterdam .	„ . .	„	...	12	...	...	12	Ditto	81	1261	...	242	1584	Ditto
Tonning . .	„ . .	„	...	4	...	...	4	Ditto	419	457	...	...	876	Ditto
„ . .	Sunderland .	„	...	1	...	...	1	Ditto	104	14	...	...	118	Ditto
Total Diseased Animals .		Foot-and-mouth	...	98	...	...	98	Total Healthy Animals .	919	20164	...	1069	22152	
		Sheep-scab .	...	145	...	...	145							
		Total . .	...	243	...	...	243							

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of October, 1878.

Veterinary Department, Privy Council Office,
November 11th, 1878.

RETURN of the Number of Places in Great Britain upon which contagious or infectious diseases (except sheep-scab) has been reported to have existed during the week ended November 9th, 1878, with particulars related thereto.

PLEURO-PNEUMONIA.

—	Farms or other Places.			Cattle Attacked.		Diseased Cattle.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Cattle Attacked.
ENGLAND.											
COUNTY.*											
Buckingham	1	...	1	...	1	...	1	...	...	...	...
Chester	2	...	2	...	1	1	...	...	...	...	...
Cumberland	5	...	5	...	3	3	...	...	...	...	...
Derby	2	...	2	...	1	1	...	...	...	...	...
Durham	...	1	1	...	1	1	...	...	...	...	...
Essex	19	3	22	2	9	9	...	...	2	1	1
Hertford	...	1	1	...	4	...	...	...	4	...	...
Kent (ex. Metropolis) . .	2	2	4	...	7	7	...	...	...	...	...
Lancaster	9	2	11	...	3	3	...	...	...	...	...
Leicester	1	...	1	...	...	...	...	...	...	...	...
Middlesex (ex. Metropolis) .	2	...	2	...	2	2	...	...	...	...	...
Norfolk	4	1	5	...	4	4	...	...	...	...	...
Northampton (ex. Soke of Peterborough).	2	...	2	...	...	...	...	...	...	...	...
Northumberland . . .	1	...	1	1	...	1	...	...	...	1	1
Notts	1	...	1	...	1	1	...	...	...	...	...

PLEURO-PNEUMONIA—*continued.*

—	Farms or other Places.			Cattle Attacked.		Diseased Cattle.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Attacked.
ENGLAND.											
COUNTY* (*continued*).											
Salop	2	...	2	...	...	...	...	...	...	...	...
Stafford	1	...	1	2	...	2	...	...	...	...	...
Suffolk	3	2	5	...	2	2	...	...	...	...	...
Surrey (ex. Metropolis)	1	...	1	...	1	1	...	...	...	...	...
Sussex	1	...	1	...	1	1	...	...	...	...	...
Warwick	2	...	2	...	...	...	...	...	...	...	...
Worcester	9	...	9	...	...	...	...	...	...	...	...
York, North Riding	1	1	2	...	1	1	...	...	...	...	...
„ West Riding	1	1	2	...	1	1	...	...	...	...	...
Liberty of the Isle of Ely	2	...	2	...	...	...	...	...	...	...	...
The Metropolis	1	2	3	...	4	3	...	...	1	...	...
SCOTLAND.											
COUNTY*.											
Aberdeen	2	1	3	...	1	1	...	...	...	...	...

Argyll	1	1	2	2	8	8	2	...	...	1	2
Edinburgh	14	2	16	...	16	16	...	...	...	...	...
Fife	7	4	11	1	6	6	1	...	...	...	...
Forfar	5	1	6	...	7	7	...	...	...	...	...
Kinross	3	...	3	...	...	...	...	...	...	...	...
Kirkcudbright	1	...	1	5	...	3	2	...	...	...	...
Lanark	1	...	1	...	2	2	...	...	...	...	...
Perth	7	...	7	...	1	1	...	...	...	...	...
Renfrew	1	...	1	...	...	...	...	...	...	...	...
Roxburgh	3	...	3	...	...	...	...	...	...	...	...
TOTAL	120	25	145	13	88	88	6	...	7	3	4

FOOT-AND-MOUTH DISEASE.

ENGLAND. COUNTY.*											
Berks	1	...	1	18	...	...	...	18	...	...	...
Chester	1	...	1	2	...	...	...	...	2	...	...
Cumberland	1	...	1	...	...	...	...	...	...	...	...
Hants	1	...	1	10	...	...	...	7	3	...	...
Lincoln, Parts of Lindsey	1	...	1	1	...	...	...	...	1	...	...
Middlesex (ex. Metropolis)	1	...	1	6	...	6	...	...	...	...	...
Northampton	...	1	1	...	2	...	...	...	2	...	...
Northumberland	...	1	1	...	1	...	...	...	1	...	...
Oxford	1	...	1	6	...	...	...	2	4	...	...
Suffolk	1	1	2	9	1	...	...	...	10	...	...
Sussex	...	2	2	..	7	...	1	...	6	...	...
Worcester	1	...	1	1	...	...	...	1	...	...	...

FOOT-AND-MOUTH DISEASE—*continued.*

—	Farms or other Places.			Animals Attacked.		Diseased Animals.				Cases which existed in previous Weeks not reported until this Week.	
	Number reported upon this Week which have been previously reported upon.	Number upon which Fresh Outbreaks have been reported to have taken place during the Week.	Total Number reported upon during the Week.	Remaining diseased from the previous Week.	Attacked during the Week.	Killed.	Died.	Recovered.	Remaining.	Fresh Outbreaks.	Animals Attacked.
ENGLAND.											
County* (*continued*).											
York, North Riding . . .	1	...	1	2	...	...	...	2	...	...	...
„ West Riding . . .	1	...	1	1	...	...	...	1	...	...	...
The Metropolis (Port of Lond.)	...	3	3	...	†51	†51	...	...	...	...	...
Total	11	8	19	56	62	57	1	31	29	...	...

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

† These were foreign animals, landed at the Port of London.

Veterinary Department, Privy Council Office, 19th November, 1878.

CATTLE PLAGUE.

According to the latest intelligence from St. Petersburg cattle plague still exists in several governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, in Bessarabia, Warsaw, Ekaterinoslav, Podolia, St. Petersburg, Kherson, Volhynia, and Taured.

In Austria cattle plague is still prevalent, and, according to the last official's reports, exists in the districts of Macarsia and Ragusa, in the province of Dalmatia ; also in the quarantine stations of Skala and Podwoloczyska, in Galicia ; also in the districts of Csanad and Szöreny, in Hungary ; and in three communes of the military frontier.

In Turkey cattle plague is stated to be still existing in the districts of Galatz and Jassy.

A few cases of cattle plague are said to have occurred in the island of Syra, in the Archipelago, belonging to Greece.

PLEURO-PNEUMONIA.

In the Netherlands, during the four weeks from 6th October to 2nd November, the following cases of pleuro-pneumonia have been registered :

In Guelderland . .	7 cases	in 1 commune.
In South Holland .	28 „	9 „
In Friesland . . .	3 „	2 „
Total .	38	12

Facts and Observations.

Maize as Food for Horses.—The attempt made in France to feed horses on maize instead of oats has failed. According to reports sent in by French army officers to the Government, it has been found that in whatever proportion maize be substituted for oats loss of muscle and energy manifests itself, besides which the horses sweat inordinately, and are easily blown. The Ministry of War has directed this system to be discontinued. The Paris cabmen, too, unanimously denounce maize-feeding as a delusion and a snare.—*Live Stock Journal.*

THE VETERINARIAN, DECEMBER 2, 1878.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

TYPHOID FEVER IN SWINE.

FOR some years past the subject of typhoid fever in swine, as the disease is commonly termed, has excited the attention of veterinary surgeons and local authorities in various parts of the kingdom where the affection has from time to time existed. We have frequently referred to the progress of the disease in different localities, and our contributors have at intervals recorded their experience of the disastrous effects of the malady.

Recently our colleague, Professor Axe, made some experiments which established the fact of the ready communicability of the disease by contact and by inoculation. Dr. Klein has investigated the affection, and the results of his experiments have been published. In fact, since Dr. Budd wrote his treatise on the subject in the *Royal Agricultural Society's Journal* some thirteen years ago, our knowledge of the nature of the disease has been considerably increased, and we probably know as much of it as we know of other contagious maladies.

Pig typhoid is now, according to the *Norwich Mercury*, destroying scores or hundreds of swine in a large area in the eastern part of the country, and cases of the disease were detected by the market inspector among swine exposed for sale on Castle Hill. The town clerk, it appears, wrote to the Veterinary Department of the Privy Council asking what action should be taken, and he was informed in reply that, as the disease is not a contagious or infectious disease within the meaning of the Act or Orders, the local authority have no power to deal with it. The Editor, in his remarks in the *Norwich Mercury* of November 6th, which has been forwarded to us, characterises the reply as unsatisfactory, and expresses regret that "an Act of Parliament which is the outcome of

the best veterinary science" should be found useless in an emergency like the present one.

We may point out that the Contagious Diseases (Animals) Act of 1878 is certainly not defective as to the extent of the power which it gives to the Privy Council, and we have no doubt that Mr. Clare Sewel-Read was perfectly correct in his view when he stated to the Central Committee that the Privy Council have power, if they think fit, to deal with this disease under the Act. Section 30 (xxxiii) is quite distinct on this point, giving power to the Privy Council to extend the definition of disease, so as to include any disease of animals. Swine are included in the definition of animals in the fifth section of the Act, and, consequently, any disease of swine can be dealt with by Order of Council.

Preventive measures, to be effectual in pig typhoid, must be stringent. The disease is fatal in its character, and therefore slaughter of diseased swine should be insisted on in all cases. Generally the disease attacks young pigs, and the pecuniary loss sustained consequent on slaughter of diseased animals will not be serious, whether it has to be borne by the owner or the ratepayer. Swine which have been exposed to the infection are not so easily dealt with. Only a small proportion of a large herd, chiefly, that is to say, the young animals will suffer, and it would be a hardship to stop the movement of all the swine from premises where large numbers are kept merely because a few of the animals are likely to take the disease.

Meanwhile, whether the disease be made the subject of legislative measures or not, we heartily accept the suggestion of the writer of the article in the *Norwich Mercury* to which we have alluded, that every farmer should act "straight" towards his neighbour. The Editor remarks that he is aware of several cases in which this course has been attempted at a heavy pecuniary loss to the owners. We are aware, on the other hand, of cases in which quite the contrary course has been taken, and the natural result has been the distribution of the pecuniary loss and the disease also among several owners, who would have escaped both had the golden rule been observed.

Typhoid fever of swine cannot be described as a new disease, although it may be new to some districts. In 1862 it was extensively prevalent in many places in England. In 1864 it produced considerable damage among swine in Yorkshire. It is well known on the Continent, and in America it has been so destructive as to threaten the extermination of the porcine race.

APPEARANCE OF RABIES AMONG THE ROYAL BUCK-HOUNDS.

WITHIN the last few days a good deal of painful interest has been excited by an official notice which appeared in the papers of November 26th, to the effect that in consequence of rabies having appeared among Her Majesty's hounds, hunting would be discontinued until further notice.

From our colleague Professor Simonds' investigations we are enabled to state that between November 6th and the publication of the notice, three well-marked cases of rabies followed quickly upon others of a somewhat doubtful nature, thus leaving no question as to the real character of the malady.

With reference to this subject, Mr. Bowen May seems to have anticipated the official notice, as he wrote to the *Standard* of November 25th :—"I was at the Royal kennels on Saturday night, and learnt with dismay that rabies had appeared amongst the hounds, consequently the buckhounds will not hunt for several weeks."

On the following day the *Standard*, in a leader, remarked :

"For some weeks to come the Royal Buckhounds will not meet. We published yesterday a communication from Mr. Bowen May, a gentleman whose name is well known to all frequenters of the Queen's Hunt, in which it is stated that rabies has broken out in the Royal kennels, and that, until the extent of the malady has been ascertained and measures have been taken for its suppression, it is altogether out of the question that the pack should meet for hunting purposes. The news is so bad that one is tempted to hope it may not prove exact, or, at any rate, that the causes of alarm may be slighter than is at present anticipated. There is no more serious matter among dogs than an outbreak of

rabies in a pack of hounds. The domestic economy of a pack is such that a contagious disease must almost inevitably spread before its existence is detected. The kennels, as a rule, consist of two large courtyards, to each of which is attached a shed or sleeping-room. In the one are kennelled the male hounds, and in the other those of the opposite sex. In addition to this there are also, of course, separate chambers for puppies, for hounds suspected to be in ill-health, and for those who are suffering from some accident or temporary disablement. Then, too, there is the boiling-room, where the horseflesh, rice, meal, stale bread, and other such material is daily digested in an enormous copper; and, lastly, there is the feeding-room, or yard, where the soup or 'Irish stew' —for such it really is—is poured out in large troughs, every piece of bone, however small, being first extracted, lest the hounds should fight for a fragment large enough to make a *casus belli*. When we recollect that rabies is communicated not only by the bite of the rabid animal, but also by any actual contact with its saliva, in which it is that the poison of the malady lurks, we can understand at once how easily a single rabid hound can infect an entire pack. Dogs when confined together are always playing with one another and pulling each other about, almost as puppies do, and in the earlier stage of rabies the affected animal suffers from a morbid tendency to bite and worry others of its kind. Then, too, it is a strange habit with hounds for each to lick the nose of the other; and in a hunting kennel this tendency is more than usually mischievous, for when the troughs into which the day's ration of soup is poured out have been emptied, and the hounds are standing about, each smeared almost up to its eyes with the reeking mass, the hungry creatures, anxious that not a fragment should be lost, mutually lick each others' faces perfectly clean.

"The present is by no means the first time that rabies, or, as it is more commonly termed, hydrophobia, has broken out in a pack of hounds. In the year 1871 the disease attacked the Quorn and the Albrighton packs. It first showed itself on the 28th of August in the Albrighton kennels. Some few days later it appeared among the Quorn pack, and at last, in the November of the same year, the whole Albrighton pack,

consisting of twenty-nine couples, had to be destroyed. Soon after a similar calamity befel the Durham County hounds—a pack of some fifty couples, under the management of Thomas Dowdswell, an experienced huntsman, who for many years had served with the South Oxfordshire, under Lord Macclesfield. Towards the beginning of November, after a very hard and severe run, Dowdswell observed a fine young hound, called 'Carver,' going from hound to hound in a very unusual manner. Taking alarm, he ordered 'Carver' to be led home and isolated for a few days. His suspicions proved to be but too well founded, for on the third day 'Carver' was perfectly rabid, biting and gnawing everything he could reach. The luckless animal was destroyed, and for a fortnight all went well. Then two more hounds were seized with unmistakable rabies. After a few days there were at least a dozen cases. Hunting was immediately dropped; a meeting of the subscribers was called, and, after some hesitation, it was unanimously resolved by the members of the Hunt 'that it was a duty they owed to the country to sacrifice the whole of their gallant pack, and to appeal to masters of hounds for a few couples to enable them to finish the season so disastrously cut short.' Since these two memorable outbreaks the pestilence has once or twice shown itself in various kennels, and in more than one instance the entire pack has been destroyed. The necessity for precautions thus severe is obvious. Apart altogether from the terribly contagious nature of rabies, we have also to bear in mind that the malady is communicated by the bite of the rabid animal, not only to its own species, but also to other animals, and to man himself. Nor is this the worst, for not only is the rabid animal a centre of disease in itself, but all those of its own kind which it infects become in their turn capable of communicating the virus; and so a single rabid dog may, in a few days, spread the pestilence over an entire county. Veterinary surgeons who have made rabies a speciality, have noticed that there have from time to time been marked outbreaks of it—that there have, in a word, been special years of rabies, exactly as there have been special years of cholera and of yellow fever. In the case of rabies, however, it has almost always been easy to trace the malady

to its source. A single rabid hound has got loose, and has ranged up and down, biting and attacking every living thing that has crossed its path. Within a week or two a number of other cases have shown themselves. Then, again, has occurred a third and more widely-spread outbreak, and so the plague, like any other infectious malady, goes on spreading more and more widely until it is either suppressed or dies out.

"Under these circumstances, the progress of the malady in the Royal kennels will be watched by all lovers of sport in the metropolis and its immediate neighbourhood, with the keenest anxiety. It may be that such cases as have at present shown themselves are isolated, and that the disease has not seized on the entire pack. The period of incubation of the malady in the dog varies from a few days to some three months, and, consequently, if the hounds already known to be infected are at once destroyed, and if, three months hence, no further case occurs, her Majesty's kennels may be pronounced practically safe. Until that time, however, has elapsed, it will be necessary to place the hounds under strict quarantine, and consequently December, January, and February—which are the three best months of the hunting season—will be absolutely lost. It is only to be hoped that the entire pack may not have to be destroyed. The Royal establishment at Windsor is spacious, and in every respect well equipped and provided, and there ought to be no difficulty in placing every single hound in a state of isolation. Rabies is the one pestilence of all others with which it is impossible to trifle or temporise. It may be that, under skilled care and attention, the present outbreak may be stamped out. Certainly the progress which has of late years been made, not in the treatment of the malady itself, but in its diagnosis, has been very remarkable. We are, it is true, as far off as ever from any cure, or even means by which to attempt the cure, of rabies. All known cases have hitherto proved fatal. There is not upon record a single instance of successful treatment, and the only thing to be done with an animal actually rabid, or even suspected of being rabid, is to kill it at once. But, on the other hand, the initial or premonitory symptoms have been definitely ascertained, and are so clearly marked that it is impossible to mistake them. It is, conse-

quently, easy, before the more dangerous stage of the disease commences, to isolate the infected animal, and so render it impossible for it to spread the contagion. Rabies in the dog commences with a slight attack of fever and symptoms of general disturbance. The creature becomes uneasy in its habits, roams about from place to place, snaps angrily at the air, as if it sought an imaginary foe, and utters at intervals short, nervous barks, as if it were angry or annoyed. Then follows the second stage, which is marked by incipient inflammation of the throat and fauces. The dog now becomes thirsty, and so far from evincing, as is commonly supposed, any dread of water, is, on the contrary, seized with a morbid thirst. Its throat, teeth, and tongue seem to annoy it. It scratches at its mouth and repeatedly licks its own nose, and paws, the pavement of its kennel, the noses of other dogs, and, indeed, almost any object that may be brought in its way. It is at this stage that the chances of infection in a pack of hounds are the most serious. But long before this stage is reached a skilled huntsman ought to have detected the disease. We shall hope in the course of a few days to hear from Windsor some news more assuring than that which Mr. Bowen May has sent us. It may, perhaps, turn out that but one or two cases have been noticed, and that in these the suspected animal has been immediately isolated and destroyed. If so, after a few weeks of careful seclusion, it may, perhaps, be possible to attempt to recommence hunting. But rabies in a large pack of hounds is so serious a matter that no precautions can be considered extreme; and, should the season of 1878-79 prove a blank one for frequenters of the Queen's pack, they must console themselves with the reflection that there are certain emergencies with which it is impossible to deal too stringently."

On the 28th Mr. Bowen May again wrote to the *Standard* as follows :—

"67, Russell Square, *November* 27.

"Sir,—In your leader in the *Standard* of yesterday on rabies in Her Majesty's kennels you hint that any further facts on the subjeet of these hounds would be acceptable, and as I was the one who reported the matter to you, I feel bound to impart what information I possess.

"The writer of the article in question is clearly well 'posted up' on the physiology of rabies, and the mode of generating that fearful canine malady; but from discussions with Dr. Shorthouse (who is a great authority) and other scientific men, I am led to believe that the disease which has now broken out in Her Majesty's kennels at Ascot is 'kennel fever,' and not rabies, and this opinion is strengthened by information I received from Ascot Heath yesterday, that there are no new cases of sickness.

"Mr. Goodall, however, is a first-class kennel huntsman, and has much experience with all diseases hounds are subject to, and on Saturday he was firmly impressed with the idea that rabies was in the kennels, and Professor Simonds confirmed his belief. I am, Sir, yours very obediently,

"Bowen May."

We will now merely add that every precaution has been taken to prevent injury being done to any one in charge of the animals, and that the most stringent measures will be adopted for extirpating the malady.

Extracts from British and Foreign Journals.

DISEASED ANIMALS AS HUMAN FOOD.

At the recent meeting of the British Medical Association, in the section Public Medicine, the question—"How far may the flesh of diseased animals be used for food?" was introduced for discussion by Dr. Samuel Drew, of Sheffield.

Dr. Drew stated, as the result of his inquiries, that in rare cases only is there any ground for believing the flesh of diseased cattle to be at all injurious if eaten; and that, if thoroughly cooked—that is, raised throughout to a temperature of 212° Fahr.—probably it is never noxious. He divided the diseases of cattle into three classes:—(1) The ordinary local or constitutional diseases, as enteritis phthisis; (2) contagious or epizootic maladies, as pleuro-pneumonia, rinderpest, glanders; (3) parasitic diseases, as trichina, measles. He alleged that no evidence whatever had been adduced showing that the flesh of animals affected by disease of the first class was in any degree injurious as food, whether the animal had died of the disease or had been slaughtered while ill. He stated that animals found dead of disease are habitually eaten by the shepherds and labourers on the sheep

farms of Scotland, and are frequently consumed by English labourers without any known ill effects. From the report of the late medical officer of the Privy Council he quoted: "During my inquiries into the diet of the Highlanders, I had reason to believe that neither the nature nor the duration of the disease is very carefully inquired into, and that a sheep found dead without marked evidence of long-continued disease is eaten. It is also a part of the ordinary food of the farmer in those localities, and also of his men, whether fed singly or on the bothey system. I made the most careful inquiries, but could not learn that any disease or disorder of the human system had been known to follow the use of this food, and it is almost universally believed to be good in flavour and wholesome in quality." With regard to distinctly contagious epizootic disease, Dr. Drew stated that, although the use of cattle dying of such maladies as food might not unnaturally be regarded as a dangerous experiment, yet the actual evidence is very strong that no evil result has followed on the use of such food, if sufficiently cooked. He quoted Coze, who stated that "at the siege of Paris in 1814 about a thousand oxen, sick to the last extremity of cattle plagues, were consumed as food, and that no malady was caused by this food." The report of the Cattle Plague Commission said:—"During the occurrence of rinderpest in England in 1865 large quantities of the meat of animals killed in all stages of the disease were eaten without ill effects;" and "in Bohemia also, in 1863, the peasants dug up the animals dead of rinderpest and ate them without bad result." Parent du Chatelet writes that "during the siege of Paris in 1870 the flesh of glandered horses was in large quantities used with impunity," and "on another occasion the flesh of 300 glandered horses was eaten without injury." M. Renault (Directory of the Veterinary School of Alfort) asserts that he "for many years made experiments, and that there is no danger from the cooked flesh of cattle, pigs, or sheep, dead of any contagious disease, however much may be the natural repugnance these substances inspire." Of the third class of malady—the distinctly parasitic—Dr. Drew said that the use of flesh of animals so affected would be decidedly dangerous unless great care were used in cooking the food. The practical inference drawn by the writer was that it was impolitic and wasteful to prevent the sale for human food of the flesh of animals which had been affected by disease of the first class; that in but few cases of the second class was the destruction of the flesh of diseased animals necessary; that the flesh of animals affected by trichinosis or measles should never

be used as food. He, however, stated that, although the flesh of diseased animals was not noxious, yet inasmuch as it, in common with underfed meat generally, was distinctly less nutritious than that of fat cattle, its sale should only be permitted as avowedly "inferior meat;" and its substitution for first-class meat be treated as a fraud.

Dr. Tripe said that, in the course of his experience, extending over twenty-two years, at Hackney, he had frequently ordered the destruction of diseased meat. It was not a fact that infected meat, if well cooked, was innocuous. Dr. Tripe instanced a case coming under his observation, in which sausage meat had poisoned several who had partaken of it.

Dr. Carpenter wished very much that he could support the views of the reader of the paper, regretting the loss. He remarked on certain cases of poisoning from meat pies, and mentioned that he had, out of water used in boiling potatoes affected with the blight, reproduced the botritus. He thought, therefore, that on either theory (volatile or germ) it was possible that, after being subjected to the boiling temperature, the poison might remain unaffected.

Mr. Sissons stated that some Blue Books issued by the United States Government supported Dr. Drew's views; but he did not think medical officers would care to eat the flesh of diseased animals, whatever theory they might hold as to its harmlessness.

Dr. Bond was willing to take up the challenge of Mr. Sissons. Except in the case of a very few diseases, such as malignant pustule, and the parasitic disease commonly known as "measles" in pork, he would eat the flesh of diseased animals, if properly cooked. The instance cited by Dr. Tripe, where sausage meat poisoned, and the case of poisoning due to baked pies referred to by Dr. Carpenter, proved nothing. Similar effects had occasionally followed eating shell-fish. Legislation had undoubtedly advanced beyond actual knowledge in the matter of diseased meat. Dr. Bond thought people ought to be allowed to purchase the flesh of animals affected with pleuro-pneumonia, and like diseases (of course at a reduced price, and the character of the meat being stated), just as they were now permitted to buy butterine or adulterated coffee.

Mr. Vacher did not believe that any analogy existed between groceries mixed with harmless adulterants and diseased flesh. As medical officer at a port of debarkation of stock from America, Mr. Vacher was frequently called upon to inspect large quantities of meat. He was in the habit of condemning sheep or oxen affected with epizootic pleuro-pneumonia, rinderpest, blackquarter (including under this term

splenic apoplexy, malignant pustule, and carbuncular erysipelas), acute rheumatism, and influenza; and pigs affected with pleuro-pneumonia, typhoid fever, scarlatina, anthrax, quinsy, and the parasite cysticercus. He frequently passed animals suffering from tuberculosis, and did not consider the presence of foot-and-mouth disease sufficient to warrant the condemnation of the carcase. In proof that cooking did not necessarily destroy the poisonous properties of diseased meat, Mr. Vacher mentioned an experiment made by Dr. Davies, who had successfully vaccinated with the contents of a tube of lymph buried in a leg of mutton while it was roasting.

Mr. Nunn considered any argument based upon the fact that animals could eat diseased meat with impunity carried very little weight, as animals were in the habit of eating offal and many kinds of food not fit for man.

Dr. Brabazon stated that, having himself been a sufferer through eating meat infested with the cysticercus, he condemned all meat visibly affected.

Dr. Griffiths thought it was not safe to pass the carcase of an animal affected with tubercle except when the disease was recent. When one lung was fully affected, and the disease had begun in the other, he refused to pass the carcase.

Mr. Balding hoped the onus of judging what was wholesome meat and what was unwholesome would not be thrown on the buyer.

Dr. Campbell found it difficult to decide in cases where the animals were only slightly affected, and asked how far medical officers were justified in condemning mild forms of pig typhoid.

The President said that if, as Dr. Drew contended, diseased meat was a matter of no importance, the Government had been grievously misled by medical men. He thought that two subjects had been a little mixed up—the fitness of diseased meat for human food was one question, and whether it had been, or might be, used with impunity was another.—*The North British Agriculturist.*

Bearing on this subject, the following case has been recently reported:

Death from Eating Pork.—An extraordinary case of supposed poisoning from eating pork has just been under the investigation of the county coroner at Whitchurch. Early in the first week of October Mrs. Taylor, of Old Hall, Flintshire, sold Mr. Taylor, butcher, Whitchurch, a pig, which he killed and dressed. A leg of the pork was sold to a widow named Ruscoe, who cooked it for Wednesday's dinner (Oct. 9th). Mrs. Ruscoe, her five daughters, and a charwoman, named Dodd, partook of the meal. Mrs. Dodd, at the ter-

mination of her day's duties, took the rest of the pork home, and gave some to her husband, and ate a little more herself. Immediately afterwards Dodd and his wife were seized with violent vomiting. Medical aid was sought, but despite everything that could be done, Dodd expired late on Friday night, October 11th, and his wife on the following day. In the meantime Mrs. Roscoe and her five daughters were attacked with the same alarming symptoms, but in these cases medical aid saved their lives. Dr. Barker, who had attended Dodd and his wife, and made the *post-mortem* examination of the body of Dodd, stated that death was undoubtedly caused by something of a poisonous nature being taken into the stomach, both it and the intestines being much inflamed.

The coroner ordered the parts retained to be sent to the county analyst to be analysed and the inquiry was adjourned.

At the adjourned inquest on the bodies of Ralph and Catherine Dodd, the only fresh evidence adduced was medical, as to the analysis of the contents of the stomachs of the deceased, and this went to show that *no traces of mineral poison* could be found.

Dr. Thursfield, medical officer of health, said that the symptoms of the illness were consistent with the deceased having died from eating diseased pork.

The jury returned a verdict that deceased died from eating decomposed pork, but whether from over-keeping or disease there was no evidence to show.

DISEASES IN SOUTH AUSTRALIA.

The following report of the Chief Inspector of Sheep for South Australia for the first half of 1878 has been published.

"During the earlier part of the period drought was exceptionally severe, and everywhere a great scarcity of feed prevailed. As might have been expected, it is amongst sheep that the greatest mortality has taken place. In additions to the victims of the drought many died from devouring poisonous plants, and others from 'hove' and other causes. On the other hand the flocks have fortunately enjoyed a gratifying immunity from disease. 'Fluke disease' has not been active, nor has it extended; scab has not been experienced; and no other infectious or contagious diseases have manifested themselves.

"Cattle, too, are healthy, but many have died from the effects of greedy feeding, and their numbers have, in addition, been thinned by pleurisy, acute indigestion, and pleuro-

pneumonia. A disease similar to that known in England has destroyed a number of working bullocks, its symptoms are the same as those of pleurisy, and inflammation of the diaphragm. It is thought that it is not contagious, but it is probably brought on by cold winds, exposure, and the want of proper nourishment. It is principally in the North that pleuro-pneumonia has shown itself, although it has existed also in the south-east. Vigorous measures have been taken by the inspectors to check the spread of the disease; many cattle have been destroyed, and those in a doubtful state of health have been isolated.

"In the south-east, horses have largely shared the fate of the cattle. Partly in consequence of the deterioration of pasture, and partly owing to the large growth of inferior grasses, many horses have succumbed, while several have died from acute inflammation of the feet. From this cause, it is stated, five horses were lost by one farmer alone in the south-eastern district. The importation of sheep and cattle from New South Wales and Queensland, and of horses from Victoria has been carried on on a large scale.

"The mortality occasioned by the poisonous scum on the waters of Lake Alexandria has been serious. No less than 16 horses, 51 head of cattle, and 784 sheep died from drinking this water, and these figures are said to be rather under than above the mark. The information made public in a report furnished by Mr. Francis as to the poisonous character of the scum has caused stockowners in the locality to exercise greater caution; and the mortality is likely to be guarded against in the future.

"The Chief Inspector points out that owing to the difficulty of identifying brands and tracing the owners of cattle, it is impossible to destroy diseased animals running on the commons and in the hundreds. The labours of the staff of inspectors have by no means been light. During the half-year over 500,000 sheep, 15,000 cattle, and 3000 horses were inspected by them, and their travels on duty extended to over 8000 miles.—*Live Stock Journal.*"

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Monthly Council, Wednesday, November 6th, 1878. Present:—H.R.H. the Prince of Wales, K.G., president, in the chair.

Stock Prizes Committee.

Mr. Chandos-Pole Gell reported that the Committee had re-

vised the prize sheet for the London Exhibition, which would be printed and sent to members of the council for consideration. The Committee recommended that Earl Spencer and Mr. George Turner be added to the list of members.

This report was adopted.

London Exhibition.

Colonel Kingscote, C.B., M.P., reported that a communication had been received from the Essex Agricultural Society, suggesting an amalgamation of their show with the Metropolitan Exhibition next year; and the Secretary had been instructed to communicate with the secretary of that Society on the subject. The Committee had recommended the Mansion House Committee to vote an additional sum to that already granted, for prizes for foreign stock and produce. The Secretary was instructed to write to the Agricultural Society of France, inviting their co-operation and assistance at the Metropolitan Exhibition, and to request the Honorary Agent in England of that Society, Mr. W. H. Delano, to act as the Honorary Agent of this Society for that Exhibition. The Committee considered several matters of detail relating to the Exhibition, and especially questions of water supply, the provision of tramways for the use of the public, the establishment of a loan museum to facilitate a comparison of ancient and modern farm implements, the exhibition of bees by the Bee-keepers' Association, &c.

This report was adopted; and at the suggestion of His Royal Highness, the President, it was unanimously resolved that the Exhibition should commence on Monday, June 30th, and close on Monday evening, July 7th.

Veterinary Committee.

The Hon. W. Egerton, M.P., Chairman, reported that Mr. Duguid had resigned the office of veterinary inspector, and that Professor Simonds had offered, on behalf of the Royal Veterinary College, his services pending the appointment of Mr. Duguid's successor. The Committee had therefore arranged that Professor Simonds should undertake the office of Veterinary Inspector till December 31st, 1878. Professor Axe had been sent by Professor Simonds to examine into an outbreak of disease at Kent. Dr. Burdon Sanderson had reported that Dr. Greenfield had been appointed as his successor as pathologist at the Brown Institution.

Dr. Burdon Sanderson had presented the following report to the Committee :—

During the month of September an opportunity offered itself

of inoculating twenty-seven animals with the exudation liquid of pleuro-pneumonia at a farm near London (that of Mr. Keevil of Kensal Green). In one of these animals the result of the operation, although performed in the usual manner by Dr. Duguid, was unfavorable. This unlooked-for result, which was due to accidental infection of the cellular tissue in the neigbourhood of the puncture, compels me to admit that the operation is not so invariably free from danger as I hoped and believed. At the Brown Institution none of the inoculations performed by infusion into a vein failed to be harmless, but on the farm, where the circumstances were less favorable, one of the twenty-seven animals died, and had to be paid for out of our fund.

Experiments have also been made at this Institution for the purpose of ascertaining whether, with due precautions, the usual and more simple method of inoculation could not be safely used, it having been suggested that the good results previously obtained were due not so much to the mode of inoculation as to the care used in operating. With this view five animals have been inoculated subcutaneously, with perfectly fresh liquid. At first no signs of local or general infection followed, but after a few days all became severely affected, and two out of the five died, a result which appears to be conclusive as to the impropriety of using this method.

There are now at the Institution four inoculated animals, the immunity of which I am very desirious to test by cohabitation with other animals. But in carrying out this purpose I find myself arrested with legal difficulties, and particularly by the Order in Council, which came into force on the 1st of October. According to this Order, no animal may be moved into any place containing infected animals. I therefore find myself compelled to recommend that these animals be sold.

During the past six months experiments have been continued as to the nature and mode of propagation of several anthracoid diseases. I am desirous to go on with these experiments during the present winter. Reports on them will be forthcoming before next spring.

I have, lastly, to state that the expenditure at the Brown Institution in connection with the experiments has exceeded the sum last received by £120.

The Committeee gave notice that at the next Council Meeting they would move for the renewal of the Veterinary Grant for 1879.

This report was adopted.

The following resolutions passed by the Council of the English Cart-horse Society were read :—

1st. That the Council are of opinion that it would be bene-

ficial both to the breeders and purchasers if there was a class for three-year-old stallions, inasmuch as horses of that age are most marketable, but are not shown, as it would be useless for them to compete in the same classes as aged horses;

2nd. That there should be a class for yearling fillies;

and the Secretary was instructed to reply that these recommendations had already been adopted by the Royal Agricultural Society.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

The last quarterly meeting for the current year was held at the Queen's Hotel, Leeds, on Thursday, the 7th instant, the president, Mr. S. F. Fallding, in the chair. The following members were also present:—Messrs. T. Greaves, Jas. Freeman, Jno. Cuthbert, J. W. Anderton, Peter Walker, J. S. Carter, J. H. Ferguson, J. E. Scriven, W. G. Schofield, R. W. Murdock, D. Spillman, J. Atcherly, W. Lodge, and the secretary.

Messrs. Pallin, 20th Hussars, Robertson, Leeds, and S. Beeson, Harrogate, were present as visitors.

Excuses for non-attendance were received from Professors Williams and J. W. Axe, Messrs. M. E. Naylor, Joseph and John Freeman, J. M. Axe, E. C. Dray, John Schofield, and J. Howell.

The minutes of the last meeting were read and confirmed.

Messrs. P. Deighton, Riccall, York, F. Danby, Bainton, Driffield, and E. P. Dwyer, Great Northern Railway, Leeds, were unanimously elected members.

Mr. S. Beeson, M.R.C.V.S., Harrogate, was nominated for membership.

Mr. Robertson exhibited and described a case of fracture of the lumbar vertebræ in a yearling colt, the accident occurring during the operation of castration.

Mr. Pallin exhibited an unique specimen of caries of the os navicularis; also a singular specimen of diseased trachea, the result of an abscess situated on the inferior surfaces of the second and third dorsal spines, and pressing upon the superior surface of the tube; the abscess ultimately bursting through it, and causing death in a few hours. The horse was apparently in health within a few hours of his death, and no suspicion had been entertained that latent mischief was going on in the chest.

Mr. Pallin read a short paper "On the Use of the Thermometer in Veterinary Practice." He highly recommended the use of the instrument as a valuable aid to diagnosis, and described

cases of disease illustrating its efficacy; thought the thermometer very useful in showing the early presence of infectious febrile diseases.

In the discussion that ensued, Messrs. Freeman, Schofield, Greaves, Lodge, and other members took part.

The President proposed, and *Mr. Freeman* seconded, a most cordial vote of thanks to Mr. Pallin—carried.

The Treasurer submitted the financial statement, showing a balance to the credit of the society of £78 18*s.* 10*d.*

Mr. Freeman proposed, and *Mr. Murdock* seconded, that Mr. Peter Walker, of Bradford, be elected as president for 1879—carried unan.

Messrs. Fallding, Ferguson, and Atcherly were chosen as vice-presidents.

Mr. Cuthbert, treasurer; Mr. Broughton, hon. sec.

Mr. Schofield proposed, and *Mr. Ferguson* seconded, a vote of thanks to Mr. Fallding for the efficient manner he had carried out the duties of president for the year—carried unan.

The gentlemen present were entertained to refreshments at the invitation of the Leeds members.

WM. BROUGHTON, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above association was held at the Blackfriars' Hotel, on Thursday, October 21st, 1878. Tedbar Hopkins, Esq., president, in the chair. The following gentlemen were present:—Professor Pritchard, Royal Veterinary College, London; Messrs. Tom Taylor, W. A. Taylor, E. Faulkner, A. Lawson, B. Wood, and A. Prescott, of Manchester; Messrs. Hutcheon, Leather, and C. W. Olam, of Liverpool; James Mosedale, of London; A. Challinor, Bolton; W. Woods, and W. Woods, junr., of Wigan; W. Whittle, of Mosley; J. B. Taylor, Ashton; Messrs. Hart and Bunnell, Oldham; W. Dacre, Altrencham; Storar, junr., of Chester; J. Marshall, Huntsford; and the Secretary.

Letters of excuse were read from Messrs. Peter Taylor, M. E. Naylor, W. J. Cartwright, and G. Heyes, Esq.

After the minutes of the last meeting had been read and confirmed,

Mr. J. B. Taylor proposed that the tooth shears, the property of the society, be returned to the maker for repairs, seconded by Mr. Hart and carried.

After a few remarks from the Secretary respecting Mr. P. Taylor's original motion with regard to a reporter to attend three meetings.

Mr. A. Challoner proposed that the secretary be deputed to engage one of the gentlemen who had answered the advertisement, at a charge not to exceed £1 1s. per meeting; seconded by Mr. Woods, and carried.

Mr. Wm. Dacre then read an interesting paper on the adoption of Dr. Burggraeve's Dosimetric System of Medicine in Veterinary practice."

Mr. President and gentlemen, while in Paris this summer, I had introduced to my notice by an old friend, Mr. Landrin, Veterinary surgeon of Paris, the dosimetric system of Dr. Burggraeve. Mr. Landrin is the author of a manual on the adaptation of the system to veterinary medicine, and has given the method great attention for some years past. On the subject of therapeutics he has written several papers, and was one of the founders of the Therapeutic Society of Paris. I need scarcely say he is an enthusiastic advocate of this comparatively new method, of which I will endeavour to give you some faint idea. Dosimetric therapeutics which was created, and which has been for a long time experimented upon by Professor Burggraeve of the University of Gaud, has for its basis the employment of the active substances of medicines, such as the alkaloids, given in doses mathematically defined and under the guidance of certain rules.

Dr. Burggraeve likens the living body to a delicate balance, affected by the slightest difference of weight in either scale, and in order to restore the equilibrium it is necessary to give medicines divided into fractional parts, and it is often the last dose administered that produces the reaction which brings back health.

In all sickness we should try to eliminate the morbid cause of disease by the employment of a principal medicine, at the same time relieving symptoms as they appear by the use of such substances as are indicated at the time.

In acute affections the medicine should be given in repeated doses until the desired effect is produced, and it is often the last dose which brings about the desired result. With regard to the action of the medicines there is nothing fixed, everything depends upon the resistance of the disease to the remedy, the idiosyncrasy of the subject, or the acuteness of the attack. In chronic affections the medicines are always given in small doses and at greater intervals than when the malady is acute, as they have frequently to be prescribed over a length of time—thus, in acute affections let the treatment be acute, and in chronic affections let it be chronic. The action of medicines

differs in acute and chronic cases; in the first they have a calming or sedative effect, and in the latter they act upon the secretory system. We see then, into what a small compass the posology of the dosimetric system is reduced, there is no fear of not having attained or having passed over the necessary dose.

Let us see now how this method is applied in disease. Take for example, a case of pneumonia, the patient is under the influence of an imitation of vaso-motor system of nerves, the thermometer indicates a high animal temperature, which shows the gravity of the case, the pulse is quick and strong, in a word he is suffering from fever, if we allow the disease to follow its course the temperature will become raised to a point incompatable with life, and the subject will succumb to the first stage of the disease; if, on the contrary, we give dose on dose of sedative alkaloids such as aconitine, veratrine, digitalin, which have a direct action on the vaso-motor system, an action that can be seen on taking the pulse or temperature, we see the change, the fever diminishes considerably and finally disappears. It however often happens that from the very beginning of the malady, instead of fever, there is a vital prostration, and in such cases we should administer Nimmo's strychnine (the sulphate or arsenate) of quassine or jalapine may be given to counteract the effect of dyspepsia and the want of appetite, the aim of the dosemetrician should be to determine the precise action of the medicine, not only on the whole animal economy, but on the different organic systems separately. Thus, morphine is a brain sedative, while cicatrine produces a sedative effect on the spinal cord and hyoscyamine, and atropine have a powerful action on the sphincters, relieving at once constipation or retention of the urine. Brucine, quinine, or better still its salts, until the vital forces are sufficiently raised, when the reaction which follows can be regulated if necessary by aconitine, veratrine, or digataline. During the course of treatment all symptoms of agitation or pain can be mastered by administering morphine, codine, or narcine, according to the degree of suffering. If there is any spasm, hyoscyamine, or atropine must be used during convalescence. In combining one alkaloid with another we obtain the special action of both substances, for example in administering at the same time strychnine and hyoscyamine we easily remove the tonic muscular contracting spasm of the œsophagus. If, instead, of having to deal with traumatic or inflammatory fever we have to treat disease of an intermittent character and miasmatic in its nature, then we must have recourse to quinine, salicin, or the salicilic acid. All the active principles alluded to and a long list of others are made up in the form of sugar coated granules,

the alkaloids they contain are of a guaranteed purity and divided into regular doses. They each contain a milligramme or a centigramme of the active substance to a dose, they are very easily given with the horn, they may be placed in a small quantity of bran or chop, a morsel of carrot, or made into a ball with linseed meal, or any other similar substance.

A propos of the dose to be given, that depends upon the age and size of the animal, for the horse four to six granules—of the alkaloids and for the other substances the arsenates for example, it is often necessary to augment the number; to the dog, one granule is sufficient, with the exception of such medicines as quassine, phosphoric acid, and santonine. One of the objections to this system of medicine is its cost. To this Mr. Landrin replies that a medicine that cures, no matter what the price may be, is always cheaper than a remedy that allows the patient to die; and, further, that the prompt resolution of the disease and a short stage of convalescence will more than cover the first outlay to the chemist,—for the proverb 'that time is money' may be very truthfully applied to our larger domestic animals. And now, gentlemen, I will in conclusion give you some extracts from five cases of that formidable disease spontaneous paraplegia, which were recorded by Mr Landrin in the Therapeutical Society's Journals, 1874, and the relation of these cases here will, I hope, give you a better idea of the doses than anything you have yet heard on the subject.

Case No. 1.—A light harness horse, attached to a vehicle, after having run about 200 yards suddenly fell lame of the near hind leg, the lameness increased rapidly, the animal had an anxious expression, was covered with sweat and threatened to tumble down, and it was only with considerable trouble he was taken to the stable; he had great difficulty in standing, plunging forward every time he moved, the hind legs flexing until the front of the fetlocks came to the ground. The breathing was much distressed, the membrane of the eye red and injected, and a quick hurried pulse; with assistance 16 lbs. of blood were taken; scarcely was this done when he fell heavily, having lost all use of his limbs. Rubefacients to the thighs and loins were applied, five granules of arsenate of strychnine and 6 grammes of phosphuric acid were administered every quarter of an hour for two hours, the animal took some hay and sloppy mash, this inclination to eat is considered by Professor Bonley to be one of the distinctive symptoms between the paralysis where there is more or less lesion of the spinal cord, and the paraplegia brought on by indigestion or retention of urine. The following day the animal was standing up, but knuckling over on to the fetlock joint of the near hind leg every time he placed it on the ground,

which he did incessantly during the day. Five grammes of the arsenate of strychnine and five grammes of phosphoric acid were given every hour for eight hours.

On the third day the same treatment, the animal eating well and was taken out for ten minutes walk. There was considerable stiffness of the hind legs and a want of confidence in locomotion, from the fourth day the patient had administered to him five grammes of arsenate of strychnine three times daily until he had taken ninety of the grammes. From this time he made rapid improvement and was shortly put to work, having made a radical recovery.

In the second case the symptoms were more exaggerated, and necessitated the continuance of the medicine for a period of five days. In this case the sulphate of strychnine was given, and the patient left the hospital quite recovered on the eighth day after the attack.

Case No. 3 presents nothing of interest. The sulphate of strychnine, 6 grammes, every hour for eight hours, was given, and returned to work in ten days.

Case No. 4 is so typical of this disease, that I have thought it worth while to translate the whole of the case. The subject was a cart-horse, brought to Mr. Landrin's establishment supported on each side by several men, and presenting the most marked symptoms of paraplegia. No sooner had he arrived than, in spite of every effort to keep him on his legs, he fell down; there was at once complete loss of motion and sensibility, and he took no notice of a needle driven into the muscles of the thigh. While down he was bled to the extent of about 16 lbs., and turpentine liniment applied with friction to the thighs and loins, in hopes the reaction might enable him to rise and get to the stable. This was found to be impossible, and a bed was made for him were he had fallen. He was ordered to get every quarter of an hour 6 granules of sulphate of strychnine and 6 granules of phosphoric acid, to be continued for two hours, sulphate of magnesia in gruel, and warm-water injections.

On the second day a cantharidin blister was applied to the loins and quarters, and during the day he got 20 grammes of sulphate of strychnine, 20 granules of phosphoric acid, and 20 granules of bromide of camphor, 5 of each to be given every hour; the bromide of camphor was given to prevent any ill effect from absorption of cantharidin.

On the third day the patient with assistance stood on his legs for a quarter of an hour or twenty minutes, and he took during the day 25 granules of sulphate of strychnine and 25 phosphoric acid, and of 5 of each every hour. During the day it was remarked that he had a great difficulty in urinating, and the urine

was a deep red colour. 5 granules of hyoscyamine were administered every quarter of an hour, and when 20 granules had been given there was an abundant flow of urine, which seemed to greatly relieve the patient. Since his arrival in hospital this animal had fed well, taking bran and green food.

On the fourth day there was no change, except that with aid the animal got up for a few minutes several times during the day. He took in the course of the day 30 granules of sulphate of strychnine, and as many granules of phosphoric acid, 5 of each every two hours.

On the fifth day he rose by himself, and lay down again naturally, getting up again several times during the day without aid. This day he got 20 granules each of sulphate of strychnine and phosphoric acid, 5 of each every four hours; he was also walked gently about for a quarter of an hour.

Sixth day.—Sulphate of strychnine and phosphoric acid in same quantities as day before; walked out twice during the day.

On the seventh day he was sent home. During the whole of the treatment that patient had taken in gruel, morning and evening, 100 grams of mag. sulph.

On the fifth and last case recorded by Mr. Landrin there was total loss of sensation and muscular power. Brought in on the 18th of June, 1874, the animal was so far recovered in the evening of the next day as to be able to walk home.

On the 22nd the case was cured and all treatment suspended. Sulphate of strychnine alone was given in this case.

Mr. Dacre also placed upon the table a morbid specimen of disease of the elbow-joint in a heifer.

Mr. T. Hopkin then read a communication on "A New Remedy for Colic." He said, that on making careful inquiry, there was no doubt but that it had occurred to some to try, in certain affections of the bowels, carbolic acid as an antiseptic, perhaps more so in human than veterinary practice. It was not to careful and laborious research that we were indebted, for the merest accident first directed attention to the value of carbolic acid in colic.

On the 23rd of April in the present year a brown mare was brought to Mr. Hopkin's infirmary suffering from spasmodic colic, but being out at the time his assistant told a groom to get a colic draught from the shelf in the surgery and give it. Instead of doing so, the groom took a bottle of dressing for wounds, containing ℞ Carbolic acid, ʒij, glycerin, ʒiv, rape oil, ʒiij, and gave it the patient in a pint of water. It had been dispensed for dressing wounds or cracked heels, and being in a bottle the same size and shape as our ordinary No. 1 colic draught, the mistake was easily made. Upon returning and hearing of the mistake, the most natural inquiry came as to the state of the mare. He

was, however, partially relieved upon receiving the assurance that she was all right; but, added Mr. Hopkin, you can easily imagine how carefully we watched her for fear of any evil consequences following. The relief given was so marked and speedy, that it was determined to try the mixture again.

We have now given it in 17 cases with such good results that I deem it of sufficient value to call the attention of the profession to it. The cases are as follows:

No. 1.—Brown mare	April 28th.	No. 10.—Roan mare	Sept. 14th.
„ 2.—Roan „	June 7th.	„ 11.—Bay „	„ 15th.
„ 3.—Chesnut „	July 30th.	„ 12.—Brown cob	„ 16th.
„ 4.—Bay horse	Aug. 7th.	„ 13.—Bay horse	„ 18th.
„ 5.—Brown mare	„ 14th.	„ 14.—Brown „	„ 19th.
„ 6.— „ horse	„ „	„ 15.— „ „	Oct. 9th.
„ 7.— „ „	„ 30th.	„ 16.—Black mare	„ 11th.
„ 8.—Roan „	„ „	„ 17.—Grey „	„ 14th.
„ 9.— „ mare	„ 31st.		

In spasmodic colic, with profuse perspiration and violence, its action is wonderful, rarely failing to give relief in from twenty to thirty minutes. In flatulent colic it speedily reduces the tympanitis, and in cases where we suspect constipation we give a dose of physic or of oil. The only fatal case was No. 10, a roan mare, which came in on Monday, the 16th of September, and when I left home on the 25th was doing well, but died on the 30th from super-purgation. She was five or six days without any action of the bowels, and too much aperient medicine, I fancy, was administered; and although the case terminated fatally, the relief afforded in the early stage was most marked. Should another case of the kind come to hand, I have no fear in saying that with proper care more favorable termination might be brought about.

I will now briefly call your attention to the notes taken at the time of two or three of the cases:

No. 3.—Chestnut mare, July 30th. *Symptoms:*—Bathed with perspiration; abdomen largely distended with gas; up and down continually in box; so restless, that it was not practicable to take the pulse. *Treatment:*—Carbolic acid, ʒij, glycerin, ℥ij, rape oil, ℥ij, given in a pint of water. All signs of the ailment disappeared twenty minutes after draught was administered.

Case 11.—Bay mare, September 15th. *Symptoms:*—Pulse 65; perspiration dripping off, as though she had been drenched with water; great pain; abdomen largely distended; could not stand. *Treatment:*—As before. A few minutes after taking draught she was easier, and in an hour was as well as ever. The following morning was sent home, and nothing heard of her since.

Case 13.—Bay gelding, September 18th. *Symptoms,* 4.30 p.m.—Pulse 80; anxious, careworn expression; tympanitis; rest-

less, and indication of continued pain, perspiration, &c. Gave 3j carbolic acid in gill of oil; stimulated abdomen; short time afterwards the animal was easier. At 8.15 p.m. pulse down to 48; no pain. In nearly all the cases recorded one dose was sufficient, but instead of dilating on the result I recommend you to give it a fair trial. I am inclined to think that Calvert's acid is perhaps stronger than the commercial acid as it is called, and which was used in the seventeen recorded cases.

Much has been said about the wonderful cures affected by some of the new drugs, and although this is one that some may say has been vaunted for everything, it is not on that account that I name it, but simply because the results are, so far as my experience has gone, superseded by any other remedy in a marked degree. The doses given varied from 3j to 3iv of the crude commercial acid in either oil and glycerin or oil, glycerin, and water, although the latter may not be a chemical compound, still I am inclined to think it the most efficacious; when given in oil alone the action of the acid is modified.

The objection (if any has been) that cases that would have been under treatment several days, one draught has cured them, and as most of you know, the British public like quantity as well as quality, and would rather pay a larger bill when more physic and less skill has been administered. Since writing the above, smaller doses of "Calvert's pure acid" have been given with equally gratifying result.

Mr. W. A. Taylor next placed upon the table two beautiful morbid specimens—one, a fracture of the inner condyle of the lower extremity of the humerus of a dog; the other an ossific transformation of a portion of the flexor brachii of a horse.

A cordial vote of thanks was proposed by *W. A. Taylor* and seconded by *T. Taylor* to Professor Pritchard for his attendance at the meeting, who, in response, said he was very pleased to be among his Northern professional friends, that it was only want of opportunity which had prevented him from attending the meetings. Nothing would give him greater pleasure than to be able to attend at some future time.

Mr. W. A. Taylor said with respect to the "Fleming Testimonial Fund," he could not understand why it had stood in abeyance so long. We had heard nothing of the matter for some two or three months; he would move that our Secretary be requested to write to the Secretary of the Central Committee, and ask him if any thing definite had been arrived at, and if not, when was it likely such would be the case, as in his opinion matters of this kind should not be allowed to stand over an indefinite period, as was the case in this instance. The motion was seconded by *Mr. Tom Taylor*, and carried.

A vote of thanks was proposed and seconded to Mr. W. Dacre, Mr. T. Hopkin, and Mr. W. A. Taylor for their papers, &c., which was carried unanimously.

A further vote of thanks to the Chairman closed the meeting.

SAM. LOCKE, *Hon. Sec.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE second fortnightly meeting of this Association was held at the Veterinary College on October 24th, Professor Osler in the chair. After the disposal of the ordinary preliminary business, the President, *Prof. McEachran*, was called upon to read his paper on "The Aids and Restraints made use of in the Practice of Veterinary Surgery," which was as follows:—

GENTLEMEN,—Composed, as this Association is, mostly of students, I venture to leave the field of scientific researches, and turn your attention to some matters of great importance to you, professionally, which are not embraced in your regular course of lectures. I refer to those aids and methods of restraining our poor dumb patients, both for the administration of medicines and performance of operations. It must be remembered that the great aim and object of our science is to relieve disease and suffering in the lower animals; hence the members of our profession should be constant and active in the preventing of cruelty to animals. We become the more impressed with this fact when we consider man's moral responsibility with regard to his treatment of the dumb creatures committed to his care. Creatures though dumb and incapable of conveying ideas in vocal expressions, yet, by a language unmistakable, they give expression to their feelings of pleasure or pain, of gratification or disappointment, of joy and of grief. Your knowledge of the anatomy and physiology of the animal body must teach you that in all animals—even from the lowest grade upwards—wherever we find a nervous system we have sensation of feeling; and the more we ascend in the scale, the more delicate and acute does the sensibility become. Your dissections must also impress you with the fact that, apart from the communicating intelligence of the typical animal man, and his possessing an immortal being, or principle called the soul, there is but little organic difference; all are essentially constructed alike, and the active principle called life is originated, preserved, and ended by the same laws. Hence we are justified in concluding that the lower animals feel pain as acutely as we do ourselves; and, keeping this idea always

before us, we will learn to do unto others as we would be done to. All are not constructed alike, even in the same species or the same family, we will find a marked difference, in the pain-enduring qualities. In the practice of your profession you will often be called upon to inflict temporary pain for curative purposes. Various restraints have to be resorted to to enable you to administer medicine or perform operations, restraints which are often unnecessarily cruel and employed with the most unfeeling thoughtlessness. In many cases the restraints causing more pain and suffering than the disease itself, and the operation to be performed. It is to such aids and restraints I wish to direct your attention, especially to what is right, in the hope that by a careful consideration of the subject you will all be induced to discourage cruelty to animals whenever it presents itself to you and in your own practice you may reduce suffering to a minimum. One of the most important essentials in a member of our profession is a patient, yet firm and determined will. Were all our patients educated by kindness and proper treatment to that degree of docility which they are capable of, we would find them much easier than we do to manage when coming under our professional care. Many animals from being teased by grooms become dangerous for strangers to approach. Others are naturally shy, and, if a stranger suddenly approaches them, in their terror they are apt to resort to their natural defence their heels or mouth, while some are naturally vicious and will resent the least interference of a stranger. For this reason you will have to practice the art of handling horses with confidence to approach, yet cautious and determined so as to avoid alarming them. You should always speak to a strange horse, in approaching him for professional purposes, fondle and encourage him, and, having gained his confidence, proceed to your examination. Many, in fact most, horses require to be placed under severe restraints to enable us to administer medicine or perform operations; but it is most astonishing how much they will stand in this way if properly managed. He then described the various aids and restraints used in administering medicine; first, for giving boluses, the varieties of balling irons and pop-guns were exhibited and explained; for drenches, the various contrivances of bottles and pullies, &c. Speaking of the twitch, he remarked that it was a very old restraint, that it is very severe and far too frequently resorted to, when we consider that the muzzle of the horse is the seat of touch, and consequently is very freely supplied with nerves. So very sensitive is this part, that many horses will scream when twitched in this way. The running noose, gag side line, Rarey method, Hobbles and the Trivis, were described in detail. The lecturer next referred to medical aids, chloroform

and ether. On this subject he remarked upon the great discovery of general anæsthesia by Sir Humphrey Davy; the latter development of the subject by an American, Mr. Horace Wells, and finally the general and successful appliances of it by the late Sir James Y. Simpson, of Edinburgh, to whom is due the credit of conferring one of the greatest blessings which it has been the privilege of science to confer on suffering humanity, in this or any other age. He regretted that so few owners of animals were willing to run the risk of accidents from the use of chloroform on the lower animals, and thus the use of anæsthetics on them had made comparatively little progress. He next explained in detail and illustrated the use of local anæsthesia by rendering the hand of one of the students locally insensible to pain by ether spray from Richardson's spray apparatus, and read from Dr. Richardson's pamphlet a description of the operation on animals to which it was especially adapted. The discussion which followed brought out many interesting points in connection with the subject. Dr. Osler described a very ingenious method of placing medium-sized animals on a table, in use at the Brown Institute, in London.

EDINBURGH VETERINARY COLLEGE.

THE winter sessions of the Edinburgh Veterinary College was opened in the City Chambers, in presence of a large number of students and others. The Lord Provost presided; and amongst others present were—Councillors Sloan, Turnbull, and Milnes, Edinburgh; Councillors Waldie and Bennet, Leith; Principal Walley, Professors Baird, Cunningham, and M'Fadzean; Mr. Rain, Kingston; Mr. Roberts, Wrexham; Mr. Reid, Leith; Mr. George Watt, Kilmany; Mr. Alex. Gillespie, Kirktonbarns; Mr. James Slimon, and Mr. H. M. Yeats, &c.

The Lord Provost, on taking the chair, said he had great pleasure in being present at the opening of the session. It was gratifying to think that the college had a most efficient and energetic staff, and that everything connected with it had for some years past worked most satisfactorily. The high anticipations that had been formed when the present staff was appointed had been more than realised. It was very pleasing to think that for some years the number of students had been steadily increasing, and he understood that this year a very large increase was anticipated. Indeed, there were that day enrolled a larger number of students than there had been on the opening day for a considerable time before. (Applause.)

Principal Walley then delivered an address. After some preliminary remarks, he said—Prominent amongst the changes which have taken place during the past year are those in connection with the army and the Legislature. The position of the army veterinary surgeon has hitherto been of a very unsatisfactory and unremunerative character, and for many years no effort was made by those in authority to remedy this; but we have now, fortunately for the profession, gentlemen at the head of affairs who are thoroughly cognisant of the injustice of the past, and quite determined to do their utmost to redeem it in the future; and though they may not have succeeded in making the recent changes satisfactory to all concerned, they have broken through the ice of officialism, and have paved the way for further action when opportunity offers. (Applause.) Certainly, as has been recently pointed out by a writer in the *Veterinary Journal*, the changes, so far as junior veterinary surgeons are concerned, are not so favorable as they appeared at first sight to be, but in due course those who may join under the new warrant will reap the benefit of what has been accomplished. The provisions of the warrant will effectually prevent that stagnation which has for so long been the bane of many army veterinary surgeons, from having no stimulus to improve themselves in the scientific details of their profession, as none but competent men can now hope to gain entrance to the army; or if they should do so, to remain in it for any length of time. The system of retiring allowance, so far as I can judge, is also much more liberal than formerly. But while acknowledging that something has been done for the benefit of army men, we must not overlook the fact that much more is demanded of them than heretofore, especially in the way of entrance tests. That a great necessity existed for a radical change in this direction nobody acquainted with the subject can deny; but I think that, in face of these extra demands, as compared with the benefits to be derived from any army career, the new warrant will not be the means of inducing the best men to come forward, particularly as other and more lucrative openings are offering themselves almost daily. In connection with the legislation of the past session in reference to the contagious diseases of animals, the veterinary profession is most justly and deservedly acknowledged, and the anomaly of "inspecting police constables," or other unqualified persons, except as assistants or supernumeraries, has been done away with—at least in England and Scotland, and to some extent in Ireland. At one time I with others was afraid that those gentlemen holding the certificates of the Highland and Agricultural Society of Scotland only would be placed outside the pale of veterinary inspectors; happily, by the earnest endeavours of the Scotch members of Parliament

and some holding important positions in the Highland Society, this injustice has been averted. When I tell you that, whilst looking up statistics for the use of Mr. Mylne, I found that of the veterinary surgeons practising in Scotland no less than 200 or thereby were in possession of the single qualification only, you see how great would have been the injustice had these gentlemen been debarred from acting as veterinary inspectors. More than this, had the qualification of these gentlemen not been acknowledged, more than one local authority would have found it very difficult to carry out the provisions of the Act, as in many districts no M.R.C.V.S. is to be found, and some of the authorities would have had to pay an independent and comparatively large salary to a M.R.C.V.S. With the Contagious Diseases Act we have other reasons to be satisfied, as it takes cognisance of and embodies in its provisions many arguments which have been used by veterinary surgeons for some years past, and we may hope that if it does not actually exterminate it will very considerably moderate those diseases of animals which have been so long a curse and a scourge to stock-owners. I think I may speak for all my brethren when I say that the members of the Privy Council will receive every assistance in their endeavours to cope with disease from the veterinary profession. One great difficulty has not yet been surmounted, and that is the difficulty of dealing with infected markets and fairs, as although the Privy Council has modified powers in this respect, yet, as a rule, if one or more diseased animals are discovered in a market or fair, all the others which have been associated with it or them will be allowed to go scot free—probably to carry diseases to many previously healthy centres; but, notwithstanding this defect, the bill cannot but be pronounced as an eminently useful measure, and though some of its provisions may at first appear hard it will ultimately prove for the good of all concerned. The humanitarian aspect of our profession has been nobly supported by Mr. James Cowie, of Sundridge Hall, who, backed by the moral support of some 500 British veterinary surgeons, and accompanied by his daughter, undertook to plead the cause of the equine race before the French authorities; and so successful was his pleading, that the responsible head of veterinary matters issued an edict which will effectually prevent the harrowing scenes and barbarous cruelties which have been so common in French veterinary schools. While the humanitarian spirit of the profession has been active, the utilitarian has not been slumbering. Not long ago, in this chamber, I endeavoured to show that the mission of the veterinary surgeon was not simply a curative one, but pre-eminently preventive. The Contagious Diseases (Animals) Act is one effort

in the prevention of disease; but in reference to one malady—*i. e.* zymotic pleuro-pneumonia—there have been wanting individuals who have strained every nerve to endeavour to arrest its spread by a purely medico-surgical measure—viz. by inoculation. Foremost, perhaps, amongst these workers has been our fellow-citizen and old alumnus, Mr. Richard Rutherford. Inoculation has for a tolerable number of years, in different parts of the world and at various intervals, been resorted to with the object of rendering the systems of domestic cattle proof against the virus of zymotic pleuro-pneumonia, and while there are many who deny its utility, there are others, and they are the majority, who speak highly of its beneficial effects. Hving had the advantage of a colonial experience, and knowing the strong opinion in its favour entertained by his friend, Mr. Graham Mitchell, of Melbourne, Mr. Rutherford has during a greater part of the year been perseveringly and assiduously labouring to eradicate pleuro-pneumonia from the byres of Edinburgh and Leith. Personally, I can vouch for the fact that the disease has declined to a very great extent during the past six months, but some little time must yet elapse before we can definitely say whether this is due entirely to inoculation, or, to some extent at least, to the operation of a well-known law which is peculiarly applicable to zymotic pleuro-pneumonia—viz. "the law of periodical decline." Whatever the future may decide, one thing at least will Mr. Rutherford have deserved, and that is the hearty thanks of everybody connected with cattle for the perseverance and energy with which he has prosecuted the inquiry, and for his endeavours to get rid of a disease which is in every sense an unmixed evil. Having briefly glanced at some things which have been accomplished, I must dilate for a short time upon a matter which is only in process of being accomplished—I refer to the negotiations at present pending between the R.C.V.S. and the Highland Society, and which, if carried out, must exercise a powerful influence on the future of the veterinary profession. These negotiations have for their object the suspension of the veterinary examinations of the society, and the admission into the body corporate of all gentlemen holding its certificate by the payment of a moderate fee, and without examination. As so little is known of the relations which have subsisted so long a period between the Highland Society and the veterinary profession, it will be profitable here to take a glance at them. I need scarcely remind you that these relations were first originated by the founder of our school, the late Professor Dick, who, as some of you know, struggled for some time, against many discouragements, to plant the flag of the profession on the soil of his ain bonnie Scotland. In the year 1819 Professor Dick first

commenced to give lectures on veterinary subjects in this city, but it was not until the spring of 1823 that the Highland Society recognised his efforts, and gave him substantial aid, following this up in 1838 by the obtaining of a recognition of the eligibility of his students for commissions as veterinary surgeons in the home and East Indian armies. In the year 1844, owing to the obtainment of a charter by the R.C.V.S., the certificate of the Highland Society was suspended, and continued in abeyance until 1848, in which year Professor Dick, being justly dissatisfied with the treatment he had received from the R.C.V.S., obtained the resuscitation of the Highland Society's examinations and the reissuing of its veterinary certificate, which received Government recognition up to a comparatively recent date. Since that time the society has continued to grant its certificate to successful candidates, and there are now upwards of 350 practising in different parts of the world with this qualification alone. On two separate occasions the Highland Society has endeavoured to obtain a charter empowering them to grant diplomas in veterinary medicine and surgery, but without success. In July last year the suspension of the society's veterinary certificate was seriously mooted (mainly by holders of the certificate) at the conjoint meeting of the Midland Counties Veterinary Medical Associations which was held at Liverpool. About the same time, too, the president of the R.C.V.S., at a council meeting held in London, gave notice of his intention to bring forward a motion having for its object the admission of holders of the society's certificate as members of the body corporate on their passing an examination in the several subjects comprised in the second and final examinations for the diploma and paying a certain fee. Whatever may be the result of the present movement, I feel confident that the Highland Society will not withdraw its assistance from a profession whose growth and prosperity it has done so much to foster and encourage. We have much to thank the Highland Society for in the past; may that indebtedness be repaid by the onward progress of our calling in the future. I cannot leave this subject without embracing this opportunity of introducing to the notice of those more immediately concerned a matter which is intimately connected with our institution, and which has for some years been allowed, most unjustly and undeservedly, to slumber—I refer to "The Dick Memorial." During the summer the subject was brought under the notice of my colleagues and myself by Mr. Mylne, of Niddrie Mains, and on making inquiries, in conjunction with that gentleman and Mr. Melvin, of Bonnington, I find that in the year 1866 a movement was originated with the object of securing to Edinburgh a suitable memorial of the late Professor Dick. Subscriptions were solicited, and a

sum of over £300 was promised; of this sum about £185 was collected, but it has been reduced (by expenses) to about two thirds its original amount—viz. £62 4s. 8d. The reasons offered for the abandonment of the scheme are anything but satisfactory, and show how the claims of a public benefactor to public recognition may be obscured and set aside by private quarrels and dissensions. The ultimate disposal of the balance of the fund remains to be determined, but I sincerely trust that we shall be able, by the assistance of those who truly revere the memory of Professor Dick, to devote it to some good and laudable purpose. (Applause.) Principal Walley concluded by giving some useful advice to the students.

Councillor Sloan (who presided during the latter part of the proceedings) said he was sure that they had all listened with very great pleasure to the interesting address by Principal Walley. (Applause.) As to the late Professor Dick, he thought that the best memorial to him was the splendid college in which they were all interested. He hoped that the present session would be one of great success; and there was good reason why it should be so, as there was not a more efficient staff of professors connected with any institution of the kind in the kingdom. (Applause.)

Councillor Turnbull said that he was sorry that the fund raised for a memorial to Professor Dick had diminished so much, as he was a man whose services ought not to be lost sight of. The fund ought rather to have increased than diminished, and he hoped that something more would be done in regard to it. He would like to know the reasons for the diminution of the fund.

Mr. Harris (clerk) said that he was not aware of the existence of the memorial fund until about two months ago when Principal Walley was kind enough to send him some old documents referring to it. The fund was originated long before he had any official connection with the College or its affairs. In looking over the list of subscriptions, he found, in the first place, that a large proportion of the original subscribers were dead or removed, so that what they had subscribed might be looked upon as lost. Besides, in speaking on that subject to some of the subscribers, they say that they had promised their subscriptions under different conditions than those which now existed, and that as their co-subscribers had disappeared, so they might be held as having also disappeared. (A laugh.) Furthermore, he found that even of the sum received about two thirds had been swallowed up in expenses. The trustees, however, had no more knowledge of the matter than he himself had. The subscription was got up outside altogether, so that whatever reflection might be made in regard to the matter, none could rest on the trustees or any of the officials of the College.

Councillor Turnbull said he was very glad to hear the explanation of Mr. Harris, as it entirely exonerated the trustees. But whoever might to blame, there was no doubt that blame existed somewhere. A large proportion of the money had disappeared, and he thought that a statement of accounts ought to be rendered in some way or other. He begged to propose a cordial vote of thanks to Principal Walley for his admirable address. (Applause.)

Councillor Bennett, Leith, seconded the motion. He said he sympathised very much with what had been said as to the fund, and he thought that some inquiry should be made as to where the money had gone.

The motion was cordially agreed to.

On the motion of *Councillor Turnbull,* a vote of thanks was given to the chairman, and the proceedings terminated.—*Edinburgh Courant.*

NEW VETERINARY COLLEGE, EDINBURGH.

ADDRESS BY PRINCIPAL WILLIAMS.

The New Veterinary College at Gayfield was opened for the session with an address by Principal Williams. There was a large attendance of students; and among others present were—Dr. Dycer, surgeon of Duke of Edinburgh's Own Artillery Militia; Major Hilson, Mr. J. Gamgee, Dr. Young, Professor M'Alpine, Professor Kitchin, Mr. Macgregor, S.S.C.; Mr. Cartwright, V.S., Wolverhampton; Mr. Bell, V.S., Carlisle; Mr. Thompson, V.S., Aspatria; Mr. Faulkner, Mr. P. Taylor, and Mr. Hopkin, Manchester; Mr. Borthwick, V.S., Kirkliston; Mr. Leather, Liverpool; Mr. Aitken, V.S.; Mr. Aitken, jun., V.S.; Mr. Aitken, V.S., Dalkeith; Mr. Balfour, V.S., Kirkcaldy; Mr. Balfour, jun., V.S., Markinch; Mr. Johnstone, V.S., Peebles; Mr. Young, V.S., East Calder; Mr. Waugh, V.S., Stirling; Mr. Kitchin, V.S., Cupar; Mr. Philp, V.S., St. Andrews; Mr. Hutcheon, V.S., Liverpool; Mr. Connachie, V.S., Selkirk; Mr. Lothian, V.S., Dunse; &c.

On the motion of *Mr. Macgregor* Dr. Dycer was called to the chair.

The *Chairman* intimated that letters or telegrams of apology had been received from Sir James Gardiner Baird, Major Boulton, and a large number of other gentlemen, including many from England.

The *Chairman* congratulated Principal Williams on the opening of the fifth session of the College. He had by great industry and assiduity overcome many difficulties, and brought the College to the front. By that he had secured the recognition

of his services as a successful teacher, and shown that he was in possession of the rare faculty of being able to impart his knowledge to others. His work had become a very extensively used class-book, and he had surrounded himself here with gentlemen eminent in various departments.

Principal Williams, who was received with loud cheers, said—In the first place, I have to refer to an arrangement, which is now almost completed, between the Royal College of Veterinary Surgeons on the one hand, and the Highland and Agricultural Society of Scotland on the other, whereby the latter has consented to discontinue to appoint boards for the examination of veterinary students and the granting of its veterinary certificate. By a supplementary charter obtained by the Royal College of Veterinary Surgeons power is given to the members of the profession to elect their representatives at the Council by voting papers instead of by personal attendance in London; and the Highland and Agricultural Society, seeing that, in consequence of this arrangement, the Council is composed of representative men and not merely of the nominees of a school, and particularly that power is now given to the Council to hold the annual meeting periodically in Edinburgh, have agreed no longer to oppose that unity of the profession which has been so long hoped for by its sincerest well-wishers. (Applause.) The arrangement agreed upon is both conciliatory and liberal. On the one hand, the Highland and Agricultural Society agrees to discontinue the examinations; on the other, the Royal College agrees to admit all those who have hitherto held the Society's certificate as members of the body corporate without examination, but simply on the payment of a registration fee. (Applause.) This end being accomplished, it will remain for the profession, so auspiciously united, to obtain powers to protect its interests by preventing unqualified persons from assuming the title of veterinary surgeon. We shall not ask, nor would such a request be granted, that none be allowed to practise except the legally qualified; what we want is that all should appear before the public under their proper designation—the farrier as the farrier, the veterinary surgeon as the veterinary surgeon. (Applause.) Referring next to the Contagious Diseases (Animals) Act of 1878, Principal Williams spoke of it as an Act of Parliament which has caused great diversity of opinion even amongst those of the same political belief—some maintaining that it is calculated to raise the price of the flesh meat of the country; that it is an Act protective of the interests of landowners and agriculturists only, and antagonistic to those of the commercial and other classes. We will not enter into what might be considered its political bearing, but simply state what

is the general belief of the veterinary profession—namely, that had the Act been passed in its first form, it would have undoubtedly prevented the further importation of foreign diseases to our shores; and even clipped and shorn as it now is, we believe it to be an improvement upon the Act of 1869, which allowed the importation of animals, subject to the inspection at the ports of debarkation. (Applause.) This is the opinion of men who have had to deal with contagious diseases, and who cannot be said to be gainers by the Act; for if contagious diseases be suppressed, the emoluments appertaining to the office of inspector will no longer be received by veterinary surgeons. Therefore it must be admitted that we at least act from no selfish motives; on the contrary, for the general good, and at the sacrifice of our pecuniary interests. There are some sections and clauses in the Act, particularly relating to its bearing upon home stock, which we might, perhaps, profitably allude to. The 30th section gives power to the Privy Council to reserve for observation and treatment an animal liable to be slaughtered under the Act, subject to payment of compensation by the Privy Council, as in case of actual slaughter. Bearing, as it does, upon experimental pathology and original research into the nature of disease, the reservation from slaughter of specially selected diseased animals is calculated to lead to interesting results, and the clause must commend itself to our warm approval. (Applause.) Section 34 deals with the registration of cow-keepers, the inspection of cattle in dairies, ventilation, cleansing, drainage, the cleanliness of milk stores, shops, milk cans, and for prescribing precautions to be taken for protecting milk against infection and contamination. On reading these various precautionary measures, we cannot but feel thankful that they have been included in the Act, as their due enforcement will go a long way to prevent the propagation amongst the population of such diseases as typhoid fever, scarlatina, &c. Not that we consider such diseases to exist amongst cattle, but that in many cases cattle sheds and the dwellings contiguous thereto, badly drained and surrounded by filth, are calculated to provide the proper material for the origin and growth of the contagia of human diseases, and that such infecting materials are conveyed over wide districts by the milk, taken from place to place and house to house. I need not refer to those outbreaks of disease originating in dairy buildings, and conveyed over whole districts, carrying disease and death to many, very many homes. Under the Act of 1869 the period of quarantine was thirty days; under the new Act it is extended to fifty-six days. In the majority of instances this latter period will be sufficiently long; but some cases, however, will occur which will prove that it is too short,

and that instead of eight, the period ought to have been extended to twelve weeks at least. There are many other sections in the Act which are highly commendable, but, as stated in the *Solicitors' Journal*, it affords, perhaps, the most remarkable instance yet produced of the modern system of delegated legislation. On fifty-nine subjects the Privy Council is enabled to make orders which are to have effect as if they had been enacted in the Act. These orders, with certain small exceptions, are to be published in the *London Gazette;* but it seems to have been doubted whether the circulation which is enjoyed by that journal among the agricultural classes would suffice to render the contents of the orders generally known; and it is accordingly provided that every order shall be published by every local authority to whom it is sent by the Privy Council for publication in such a manner as the Privy Council may direct, but the validity of the order is not to be affected by want of, or defect or irregularity in, any publication thereof. The publication is to be at the expense of the local authority, and it is hardly to be supposed that the Privy Council will desire to burden the local rates of every agricultural district in the country with the cost of advertisement in the local papers or elsewhere of lengthy orders on the fifty-nine subjects. But how otherwise is a farmer to know the law? He may buy the Act, acquaint himself with its provisions, and consider himself fully prepared to observe the law in case the diseases specially mentioned in the Act—viz. cattle plague, pleuro-pneumonia, or foot-and-mouth disease—visit his farm. But he will probably be surprised to hear that, by an order made on the 16th August last, the Privy Council provided that "horses, asses, and mules shall be deemed to be animals—(Laughter and applause)—and glanders and farcy to be diseases," for the purposes of certain sections of the Act; and that by the same order provisions were made for sheep-pox and sheep-scab. The farmer, in fact, unless he subscribes to the *London Gazette*, can never be certain that he knows his duty; and if he resolves to take, read, and inwardly digest his *Gazette*, he will cut open the lively columns with a feeling akin to that of the spectator who glances at the share-list of the *Times*. (Laughter.) He may console himself to-day with the thought that, at all events, he knows what diseases are within the Act; but to-morrow he may find he has to begin his study afresh. (Laughter and applause.) I think it a great pity the Act does not make some provision for the encouragement of an extended trial of the efficacy or otherwise of inoculation for the prevention of pleuro-pneumonia. In this neighbourhood, within the last few months, inoculation has been performed by Mr. Rutherford to a great extent, and, so far as I can personally speak of the operation, it has undoubtedly been the means of preventing the

propagation of the disease. (Applause.) But to combat such a disease as pleuro-pneumonia, now so firmly established amongst our cattle, more is required than the personal endeavours of a single individual. We, however, extend to that gentleman that praise which is justly his due for his boldness in introducing the experiment. (Applause.)

The proceedings were brought to a close with votes of thanks to Principal Williams and the chairman, Dr. Dycer.—*Edinburgh Courant.*

Veterinary Jurisprudence.

CLAIM FOR PROFESSIONAL SERVICES.

MURDOCH *v.* SWANN.

Heard at the Leeds County Court on October 31st last.

THIS was a case in which the plaintiff was Mr. R. W. Murdoch, veterinary surgeon, Leeds, and who sued Mr. E. W. Swann, iron merchant, Middlesborough, for the sum of £3 4*s.* 6*d.* for professional services rendered during January, 1877. There was a counter-claim set up by the defendant for £50 for negligence, the plaintiff having, as he (defendant) alleged, wrongly certified a horse to be rising *five years* old when it was only *four*.

Mr. West, barrister, appeared for the plaintiff, and Mr. Ferns, solicitor, for the defendant.

Before the case had been opened,

His Honour asked the advocates if they did not think it was a case for an assessor, who could bring his knowledge of horses to bear on the case.

Mr. Ferns intimated his willingness to accede to that course.

Mr. West said he did not think it was a case for reference, but rather a question of law, and added that both the assessors to the Court were engaged in the case.

Mr. Ferns.—It will be the same thing to me whichever way it is.

Mr. West.—I have got around me to-day professors and veterinary surgeons. It would be like throwing twelve trumps away, and giving the defendant the chance of playing another game.

All witnesses, on both sides, were then ordered out of court, and the case was proceeded with by

Mr. West, who said that the plaintiff, who had been a veterinary surgeon in Leeds for a number of years, had been instructed by the defendant at different times to examine horses for him. On the 13th, 15th, 16th, and 17th of January he rendered professional services. The plaintiff, following out the defendant's instructions, examined a bay gelding on the 18th of January at

Messrs. Parson's, horse dealers, Leeds. The item in the bill for services rendered on that day was disputed by the defendant, who, the learned counsel understood, had set up a counter-claim. He then called the following evidence:

Robert Walker Murdoch, the plaintiff, was then called. He said, in answer to Mr. West, that he was a member of the Royal College of Veterinary Surgeons, practising in Butt's Court, Leeds, where he had been for a number of years. In consequence of instructions which he had received from the defendant he had attended Messrs. Hepper's Horse Repository, Leeds, and Mr. Binn's Horse Dealers' Stables in Leeds, for the purpose of examining and trying horses on the different days between the 13th and 17th of January, 1877. On the 18th of January he examined a horse at Parson Brothers' Horse Dealers' Stables, Leeds, for the defendant, and gave a certificate of his examination to the following effect:—"By this I certify that I have this day examined a bay gelding. I find the said gelding to be rising five years old. Sound with the exception of splints on the inside of both fore legs, which, in my opinion, will not cause lameness."

Cross-examined by *Mr. Ferns*.—The horse he examined at Parsons' was at the defendant's own request.

Mr. Ferns.—Did you examine the horse's mouth? Yes, or I could not have certified him to be rising five years of age.

Are the teeth in a young horse's mouth the general indications of his age?—They are spposed to be.

Had any teeth been taken out of this horse's mouth?—Teeth had been taken out to allow others to come up.

Is that a practice among horse dealers when they want to pass a horse off to be older than what he really is?—Yes.

What teeth are extracted to give the mouth this altered appearance?—The milk, lateral, or corner incisors.

Did you notice, in this instance, whether any of the incisors had been extracted?—Yes, I did.

Did you point that out to your employer?—No, it was not necessary to tell him.

Seeing that some incisors had been removed, was not that an indication that there was an attempt at fraud on the part of some one?—It must have been; the idea was to make the horse look a little older than he really was; it is what is called a "doctored" mouth.

Well, now, seeing that, why did not you tell Mr. Swann that there had been some "doctoring?"—The permanent corner incisors were in the jaw and protruding about half an inch, and that indicated the horse was rising five years old.

Were you paid by Messrs. Parson?—No, I was not paid; do you think I do such things?

You did not receive money?—Do you think I was bribed to pass this horse?

Have you been employed by Messrs. Parson?—I have.

Are you their veterinary surgeon?—No.

In what capacity have you been employed by them.—I have been employed in examining horses and in treating diseases.

You observed the appearance of the horse's mouth and teeth, and yet you never told your employer?—I told him it was rising five years old.

Will you swear that you thought it was rising five years old?—Yes, I will; it was my opinion.

Would you be surprised to hear the horse was only rising four years old?—I might have been mistaken in my judgment.

Did you not converse about this horse's mouth?—Not that I know of or can remember.

Do you remember Mr. Swann writing to you about this matter?—Yes, it was on April 9th, 1877.

The letter was then put in and read as follows:—"The horse you examined for me at Parsons' I find is only four years old instead of five, and a backward one too. This being so, he is no use to me to do my work."

Witness, continuing his cross-examination, said: Mr. Swann came over to Leeds afterwards, and asked him (plaintiff) to go to Middlesborough to examine the horse again. He went over on the 30th of August, 1878, in company with Messrs. Taylor, Lawson, Cuthbert, and Broughton. At that time the horse had a perfect set of teeth.

By *Mr. West*, in re-examination, plaintiff said it was a common practice with unscrupulous dealers to extract a horse's teeth in order to make him look older than he really was. The proof of a horse's age by his teeth was not certain; there was not any absolute proof of a horse's age known to veterinary sugeons, whether a horse is four or rising five years old, if his teeth have been tampered with. The horse was examined at the same time as he did himself by his assistant. The way in which a horse had been fed and cared for would have some tendency to alter the form of its mouth.

By *Mr. Ferns*.—The difference between milk and permanent teeth was that the milk teeth were smaller and had less fangs than the permanent ones.

Professor Williams, of the New Veterinary College, Edinburgh, in answer to Mr. West, said he had been in practice for over thirty years. It was sometimes the practice among unscrupulous horse breeders and dealers to remove the milk teeth, so that the permanent teeth came up sooner tban if nature was allowed to take her own course. When this trick had been done skilfully, and the permanent teeth had made their appearance, it was quite sufficient to deceive any veterinary surgeon of ordinary skill and knowledge.

Cross-examined by *Mr. Ferns*.—If the corner permanent incisors were growing but not fully grown in January, 1877 (when the examination took place) he should assume the animal was rising five years old. If the incisors were full grown he should say the horse was five years old. The tush was a canine tooth

protruding at the side of the mouth. It generally appeared at about four years old, but he had seen them before that age. If the tush was cut it would indicate the animal was rising five. If he found that the tush did not correspond in growth with the permanent corner incisor he should still say the horse was rising five years old.

Peter Taylor, Manchester, said that he had been in practice thirty-four years as a veterinary surgeon. It was a common thing among dealers in horses to extract milk teeth in order to allow the permanent teeth to come up into the mouth before the ordinary time. The appearance of a horse's mouth after this operation was done was quite sufficient to deceive a veterinary surgeon; in fact, he had himself been deceived by this trick. The tushes, in his opinion, were not much to go by in telling a horse's age, as they could be tampered with. There was only one way by means of which a horse's age could be ascertained, and that was so tampered with that it was no sure criterion.

Cross-examined by *Mr. Ferns*.—He saw the horse on the 30th of August last; at that time the horse had a full mouth of permanent teeth. If he had been employed by a gentleman to examine a horse and had noticed irregularities of the teeth he should have considered it his duty to have acquainted his employer of the fact that the mouth had been tampered with.

Martin Naylor, Wakefield, who had had from thirty to forty years' experience as a veterinary surgeon, deposed that it was a well-known fact that the mouths of horses were sometimes "doctored," and that process would deceive a well-qualified veterinary surgeon; he had been deceived himself. He remembered a case in which a horse of his own had a full mouth of permanent teeth at three and a half years old, and appeared to be five.

James Freeman, Hull, who had been in practice thirty-four years, said, in answer to Mr. West:—The practice was a common one of removing the milk teeth so that the permanent teeth came up sooner than they should. Supposing that this was done, it would delude a veterinary surgeon.

John Cuthbert, Leeds, thirty years' experience as a veterinary surgeon, said that, if the corner milk teeth had been tampered with when the four other permanent ones were in the jaw, it would deceive an ordinary skilful veterinary surgeon in telling the precise age of the animal. He should consider it his duty if, on examining a horse, he found that the mouth had been "doctored," to call the attention of his employer to the fact.

John H. Ferguson, Leeds, corroborated the previous four witnesses' evidence.

William Broughton, veterinary surgeon, Leeds, gave evidence to the fact that it was a common thing to extract the milk teeth in order to allow the permanent ones to come into the mouth. When this was done it would deceive a veterinary surgeon in examining a horse's age.

John Greaves, Manchester, forty years' experience, said that there was no certain test of the age of a five-year-old horse. It was a very uncertain way of ascertaining a horse's age by the tush alone, but that combined with the other teeth was the only method known. He then corroborated the previous witnesses' evidence as to the likelihood of a veterinary surgeon being deceived by a "doctored" mouth.

Leonard Parsons, horse dealer, Leeds, had been in business in partnership with his brother for twenty years. He remembered the bay gelding he sold to Mr. Swann on January 18th, 1877. He bought him in County Tyrone, Ireland, and when he was sold he had been in his possession only four days. He examined the horse's mouth when he bought him, and found that he was rising five years old. The horse had cut his corner permanent teeth at that time. Before the horse was sold he saw the plaintiff examine it. Before that time Mr. Swann and also his coachman had examined it. After the examination by the plaintiff he sold the horse to Mr. Swann for £100. He was quite sure there was not a milk tooth in the horse's mouth on the day that he was sold.

Cross-examined by *Mr. Ferns*.—Is it your practice to give coachmen something to pass horses?—I generally give them £1 when their employers purchase a horse from me.

Did you not give him (Mr. Swann's coachman) £2 10s.?—Certainly not; I gave him £2.

John Tusking, who had been for forty years a horse dealer at Hull, remembered going to Parsons' stables on January 18th, 1877. He tried at that time to purchase a bay gelding (the one in question). It was rising five years old, and had not a milk tooth in its head. He failed, however, to buy the horse at that time, but went back in the afternoon and saw Mr. Murdoch examining it for Mr. Swann. It was eventually sold to Mr. Swann.

William F. Greenhalgh, veterinary student, New Veterinary College, Edinburgh, remembered the plaintiff examining the horse in question for Mr. Swann. He (witness) examined it at the same time; he was sure the horse was rising five years old, because the corner milk teeth were out and the permanent ones through the gums in their places. He remembered the occasion by something that happened at that time.

This concluded the plaintiff's evidence, and the case was adjourned until October 21st.

October 21st.—At the adjourned hearing at this date, Mr. Ferns, solicitor, Leeds, addressed the Court on behalf of the defendant, and said that his Honour would be well aware that the case now assumed a different shape to what it did when it was before him on the last occasion, and he thought he had some matters to submit which would be well worthy of consideration at the hands of the Court. The plaintiff sued the defendant for £3 4s. 6d. for commission in connection with

the examination of a horse, which was subsequently purchased by the defendant, the plaintiff having certified that the horse was at that time rising five years old. The learned counsel, he said, admits that there has been a mistake, and the defendant sets up a counter-claim because of that error of judgment, and the question now is whether that mistake has been the result of either negligence or a want of professional skill. The learned gentleman (Mr. West) called a *posse* of witnesses, all highly respectable, and men of the highest position and skill in their profession. Why he did so I do not know, but I am sure that notwithstanding the distinction some of these gentlemen enjoy, that will not prejudice the defendant in your Honour's mind. As to the question of the counter-claim, if the plaintiff had given proper advice with respect to the horse in question, certainly nothing would have been heard of the counter-claim, but that a certificate was given, which was inaccurate, is unquestionable. That point might be taken for granted at once. It was not imputed that there was fraud in connection with the examination of the horse's mouth, but there were such indications of the condition of the mouth of the animal as ought to have struck the attention of a skilful veterinary surgeon. There was the admission that the incisors had been extracted, and that was an indication of fraud which ought to have struck the attention of Mr. Murdoch.

The Judge.—Is not the question here rather whether a horse which had only just turned three years old was capable of doing the work of one which was actually rising five?

Mr. Ferns.—The plaintiff told you that the mouth was in a condition which any veterinary practitioner would have recognised as that of a five-year-old horse. The foal teeth had been extracted, he said, and therefore any veterinary surgeon on examining the mouth might very easily be deceived.

The Judge.—You say he ought to have shown that knowledge which would have enabled him to call the attention of his employer to the fact that there was something wrong in the mouth, that it had been tampered with, that something had been done in order to make the horse appear that which it really was not.

Mr. Ferns said his Honour should bear in mind that not one of the eminent men who had been called, had themselves seen the horse in question, and he should in opposition to their theory call a number of skilled persons who had seen the animal, and who would express quite a contrary opinion. Mr. Murdoch said the foal teeth had been extracted, and these had made room for permanent teeth. An apprentice was called, who was also present at the examination, and he said the teeth were not half grown, but were developed in the jaw. This was the only substantial evidence before the Court as to the real position of the horse's mouth; and what reliance could be placed on Murdoch's story when he told the Court that some of the teeth which were commonly extracted still remained there, and excited no suspicion of fraud in his mind?

The Judge.—That is not exactly so. You dispute that he has exercised the ordinary caution expected of a person in his position, and that, therefore, he is not entitled to his fee, and that he was taking advantage of the confidence placed in him because of his professional position. What do the witnesses say relative to the condition of the mouth of this horse, and is there anything inconsistent in their statements with the supposition that the plaintiff's judgment was true and reliable? Your case appears to be that the witnesses for the plaintiff have come forward to make statements which were untrue. That is the position in which you stand, unless you can show that the plaintiff is a person entirely ignorant of an essential element of his professional knowledge, and that had he not shown that want of skill this certificate would not have been given.

Mr. Ferns said there was no fraud alleged, but if the conduct of the plaintiff was inconsistent with a knowledge of his profession, surely he ought to be held liable for the error of judgment which undoubtedly had taken place.

Mr. West said either there should be a plea of fraud or else no such suggestions as these should be made.

The Judge.—There is certainly nothing in the evidence to warrant any such an imputation.

Mr. Ferns hoped that they would wait till they had proceeded further with the case. He had competent veterinary surgeons himself to call, and he would not have taken up this view of the matter had he not very good grounds for the observations he had already made.

The Judge.—Still it requires strong evidence to impress the mind of the Court with the idea, that a gentleman of practice like the plaintiff can have shown such a want of skill as you would impute.

Mr. Ferns.—The breeches-pocket influence is very strong indeed with many people.

The Judge.—The issue I thought I had to try was whether, under all the circumstances, Murdoch had exercised that skill which the defendant was entitled to claim at his hands. Of course, if you put it to me that Mr. Murdoch, being employed by Parsons, and knowing the defect in the horse's teeth which you allege, lent himself to the sale, it would be a case of fraud. I should advise you not to make that allegation.

Mr. Ferns.—My client will not go to that extreme, but he will tell you that he asked Mr. Murdoch if he did business for Parsons, and Murdoch replied that he did not, and added that he did not even know him.

Mr. West.—Surely this ought to have come out by cross-examination.

Mr. Ferns.—I went as near the wind as I could.

Mr. West.—You did not ask a single question on that point.

The Judge.—You ought to have raised the issue on the pleadings. If the case had been before a superior court there is no

doubt that you would have had to make this part of the pleadings. If I had known that this issue was likely to have been raised, I should have sought the aid of a jury.

Mr. Ferns.—But it was in consequence of the express answer of the plaintiff, that he did not know Parsons.

Mr. West.—It is a great pity ; but the matter now to be considered is the challenge thrown down, to the effect that Murdoch did not know either Parsons or his place of business.

The Judge.—I think that is too bad. Was there here that sort of negligence which damaged the defendant, and if so what is the extent of that damage ?—that is the issue.

Mr. Ferns.—And it may be that there was that negligence, which every one of the plaintiff's witnesses, with the exception of Professor Williams, admitted there might have been, without incurring any neglect of professional skill.

The Judge.—Two of them said that they themselves had been deceived.

Mr. Ferns said that they had a right to expect reasonable skill from a person in Mr. Murdoch's position, and if he showed that in this instance the plaintiff did not show a reasonable amount of skill, such as the defendant was entitled to at his hands, that would be sufficient for him. Now, he would ask the attention of the Court to the facts which he should prove. The defendant had paid £100 for a horse, which, had the certificate not been such as it was, he never would have purchased, and Mr. Murdoch himself was obliged to admit, that if the horse had only been rising three years old, £40 would have been too much to pay for him.

The Judge.—I think he did not say that. What he said was that a horse coming four years old would not be worth as much as one coming five.

Mr. Ferns went on to say that he should call evidence to prove that when this horse was sent to Middlesborough it was found that it was not up to its work. Two first-class veterinary surgeons were called in to give their opinion as to what was the matter with the animal, and they made the discovery that the horse was not of the age which Mr. Swann had been led to suppose. Then some correspondence ensued, and the question arose as to the genuineness of the certificate. The question mainly to be considered was, whether the foal teeth had been removed for the purpose of deceiving the purchaser, or whether there had been an error of judgment, which might even have misled the most skilful veterinary surgeon.

The defendant, *Edward Willes Swann*, was then examined by Mr. Ferns:—He said he was an iron merchant at Middlesborough. In January, 1877, he asked Mr. Murdoch to examine a horse at Parsons. After the animal had been put through the usual stable exercises, he expressed a wish to buy him, and asked Mr. Murdoch to make an examination of him. Parsons had, before that, stated that the horse was rising five years old. After the

exercise which the horse had been put through and had cooled down, a final examination took place. In two hours afterwards he went to the stables and found Murdoch there. He then asked him if the horse was sound, and he said it was, and on the following day gave him the certificate in question. Believing in the truth of that certificate the horse was sent to Middlesborough. Almost immediately after arrival he was tried as a carriage horse, but he showed great weakness, and not able to do his work. He was properly tended but still he did not perform as it was expected he would do. He therefore called in two veterinary surgeons, Mr. Elliot and Mr. Adamson. The first examination was by Mr. Elliot, on the 7th of April, and another examination took place on the 17th. In consequence of the opinion those gentlemen expressed, he came over to Leeds and pressed Mr. Murdoch to go with him to Parsons with a view to take the horse back. Mr. Murdoch rudely declined to have anything to do with him, and stated the horse was of the age he had certified, and was simply suffering from cold, and that if they gave him gruel he would soon be all right. He did not give him gruel because it was unnecessary, but he was obliged to withdraw the horse from the work for which he was intended, and put him out to grass. During the whole of the twelve months he was not able to do the work, and the loss sustained by him during that period would be about £30.

Cross-examined by *Mr. West*:—Mr. Murdoch examined the horse's mouth in his presence, and his assistant examined it also. He did not at that time examine the horse's mouth himself. He found out that the horse was not rising five years old shortly after the arrival home. Mr. Elliot told him the horse was rising four years old, but was an over-grown horse for his age. He did not recollect that Mr. Elliott told him the foal teeth were in, but he said it was a backward horse.

Re-examined by *Mr. Ferns*:—He thought if the horse was not able to do its work at the time he made the purchase, the advice which had been given him was not very valuable.

Mr. Thomas Elliot, M.R.C.V.S., Middlesborough, said, on April 7th, 1877, he was called in by Mr. Swann to examine the mouth of this horse, and he thought it was a three-year-old rising four. The development of the teeth led him to this conclusion. The horse had the central incisors fully grown and the laterals were not quite grown, as the corners or sucking-teeth were there. On the 17th he and Mr. Adamson together inspected the horse, and the mouth was exactly the same then. They neither of them had any doubt at all that the horse was then a three-year-old. If that had not been the case, those central and lateral incisors would have been replaced by permanent teeth. In a horse aged three and a half years old and another aged four and a half there would be very different indications in the development of these teeth. From all the indications, he had no doubt at all that the horse was only a rising four-year-old. Any skilful professional

man having had a full opportunity of examining the mouth of that horse would not but have come to the same conclusion.

Cross-examined by *Mr. West.*—There would not be much difference in the mouth of a horse foaled in March and another foaled in August. If a horse was foaled in March he would be considered no older if he had been born in May. If a horse was born on the 31st of December he would not be reckoned the same as if he had been born on the 1st of January. He had never heard of a three-year-old being made into a four, nor of a four-year-old being turned into a rising five, but it was a common practice to extract the teeth. He had never, to his knowledge, seen a horse's mouth that had been tampered with.

What were you before you were a veterinary surgeon? An apprentice to a builder. He had heard the evidence for the plaintiff, and he did not agree with it. The milk teeth were evident to anybody who made a careful examination; any one with merely ordinary knowledge must have seen it, and certainly both veterinary surgeons and horse dealers ought not to have been deceived in such a case.

Mr. Thomas Adamson, M.R.C.V.S., of Darlington, said he had been in practice twenty-four years. On the 17th of April he was called in to examine a horse for Mr. Swan and Mr. Elliot was present. He examined the horse, and found him rising four years old. He came to that conclusion from the state of his mouth. The central teeth were permanent, both top and bottom, and the lateral teeth were just protruding; the others were the foal teeth. He had never seen a horse's mouth like this that had been "doctored," and he spoke from experience of twenty-four years when he said that the age of this horse was not rising five years old. In his opinion no professional man of ordinary skill would say that that horse was rising five years old.

Mr. James Carter, horse dealer, Middlesborough, said he had generally from seventeen to twenty-three horses under his care. On the 17th April he went to Mr. Swann's, and found this horse to be a rising four-year-old.

Cross-examined by *Mr. West.*—He had never been deceived in the age of any horse under seven years old, and no practical man ought ever to be deceived. He had never known of any horses' mouth being tampered with for the purposes of sale, and no practical man should be deceived by any such tampering. There would be a wide difference in any case between the mouth of a horse just turned three year old and another approaching five.

Re-examined by *Mr. Ferns.*—The mouth of this horse had not been tampered with when he saw it in April.

Sampson Horsley, of Middlesborough, said he had been a farmer and accustomed to horses. He had examined this horse and found him to be turned three years old. There could be no deception, for the foal teeth had not started lifting up at all; they were firm and in their proper place.

John Reader, farmer, of Hull, was in March, 1877, resident at Middlesborough, and was asked by Mr. Swann to look at a bay horse, and he found him three years old rising four. The corner teeth were foal teeth and had not been tampered with.

Mathew Hedley, V.S., corroborated the evidence of the previous witnesses, with respect to the condition of the mouth of this horse, and was of opinion that no veterinary surgeon of ordinary skill could be deceived by it, or ought not.

John Fryer, V.S., Kirkby, Fleetham, and *Thomas Pleus*, of Stockton, gave confirmatory evidence.

Mr. West then replied upon the whole case, and contended that this was not at all a case of an unscrupulous farmer or dealer having attempted to deceive a purchaser. There was an abundance of evidence that men of the greatest experience might possibly be deceived in an investigation, such as the horse had undergone in this case; but also the Court should have very much regard to the contradictions of the witnesses. What appeared to be distinct and plain enough was that the appearances of a horse's mouth might easily mislead the most experienced practitioner. That Mr. Murdoch was a man of considerable experience could not be denied, and if it were possible to practice a deception of this kind, it might happen in the case of Mr. Murdoch as well as with those eminent witnesses he had called, and whose evidence made out the strongest possible case for the plaintiff. The plaintiff had been asked to examine the horse for the purposes of age, and Mr. Murdoch took the condition of the mouth as he found it, and gave an honest opinion. His assistant also, who must have had some experience in these matters, spoke in strong corroboration, and this was a case of confident corroboration of the plaintiff's evidence. It should be observed by the Court, that cases of this kind had occurred more than once before. He need scarcely mention the Running Reid case, in which some of the best judges of the country had been taken in. The Court should not forget that here it was not charged that there had been any wilful deception, but that the plaintiff had been negligent. He contended that the evidence, which was of as formidable a character as perhaps ever was imported into a case of this kind, all inclined to the side of the plaintiff; and taking into consideration that imputations had been made upon the plaintiff, which had either been withdrawn, or not at all substantiated, he thought he had presented a case for the consideration of the Court which would entitle the plaintiff, not only to a verdict but the vindication of his character, as a man of skill and sound reputation.

The Judge reserved his decision.

On the 11th the Court reassembled, and the Judge said that he had very minutely examined the evidence, and had come to the conclusion that the animal sold in this transaction was three years old, rising four. The case of the plaintiff was this, "I am a professional man of great experience, and to the

best of my judgment this horse was of the age which I have stated in my certificate," but it was a well known fact, that a horse three years old rising four was not fit for carriage practice. The strength of the animal was developed as far as could be, and as far as the plaintiff's experience went the horse could not do the work. If the plaintiff's story were true there was undoubtedly a cruel practice by horsedealers to tamper with the mouths of horses so as far as they could to reverse the appearances. The only witnesses called as to the actual condition of the mouth at the time were Parsons, the assistant, and another witness; and they spoke of the presence of the four permanent teeth. The evidence of all the scientific men admitted that they might have been deceived, but all their evidence proceeded upon the "if." On the 17th of April, when Mr. Elliott was called in, he found the four sucking teeth still there, and in his opinion a man of ordinary skill ought to have perceived them. His Honour could understand that upon this point even the most eminent men could disagree, and it was admitted that Mr. Murdoch was a person of skill and experience. But there was the evidence of Mr. Carter and others, who were all well accustomed to horses, and they spoke confidently to the presence of the teeth, which indicated that the horse was younger than the plaintiff had stated him to be. His Honour could come to no other conclusion than that the plaintiff was not entitled to his fee, and the verdict must be for the defendant. With regard to the counter-claim set up by Mr. Swann, he did not think it was at all a case for unliquidated damages. He absolved Mr. Murdoch entirely from any blame in this matter, and as to there being any collusion between him and Parsons any one who had heard the case could not entertain that idea for a moment. It was the same as a surgeon or a barrister; there might have been an error of judgment. But under all the circumstances he must give a verdict for the defendant in the first case; and as regarded the counter-claim, he thought a verdict for £15 and costs would meet the ends of justice.

Mr. Turner (who appeared for the plaintiff in the absence of Mr. West).—I hope it is understood that the costs will be under £15, and I hope your Honour's attention has been called to the fact that the defendant worked the horse from January to April.

The Judge.—They took the horse to grass.

Mr. Turner.—But not until the end of April. If the examination had taken place on the 1st of May, according to the rules of the trade, Mr. Murdoch would have been right in pronouncing the horse to be between four and five years old when this examination took place; but Mr. Swann had worked the horse until the 19th of April, and then the examination took place.

The Judge.—He tried to work it.

Mr. Turner.—He had actually worked it; a period of two or three months had transpired.

The Judge.—All these things I have taken into consideration, and I am not at all disposed to alter my verdict.

Mr. Turner.—I wish to call your Honour's attention to the fact that the sum which you have awarded was not altogether for the examination of this horse. Mr. Murdoch went to Hepper's with Mr. Swann, and there were several telegrams and other services.

The Judge.—But the only thing before me was the examination of the horse.

Mr. Ferns.—And the evidence was irresistible.

The Judge.—Well, what you (Mr. Turner) have mentioned may be a ground for an application for a new trial; but in this case I have had no other evidence before me but that for professional services. I have had no other evidence before me whatever. It is evident that, whatever other services there have been, they were part of the *res gestæ*.

After hearing Mr. Turner again on the question of costs his Honour decided to give a verdict for £15 on the counter-claim, and the costs to be settled by the taxing officers.

POISONING BY YEW.

EXCHEQUER DIVISION.—*Nov. 8th.*

(Sittings in Banco, before the LORD CHIEF BARON and Baron CLEASBY.)

CROWHURST *v.* THE AMERSHAM BURIAL BOARD.

JUDGMENT was delivered in the above case this morning by the Lord Chief Baron, being that of his Lordship and Baron Pollock. The case was argued in last Trinity Sittings and judgment deferred. It was an appeal from a decision of a learned County Court Judge (Mr. Wigham), in favour of the plaintiff, on a claim for the value of a horse which died from eating the branches of certain yew trees which projected from the cemetery on to a field in the occupation of the plaintiff. It was not quite clear whether the horse had died from eating the shoots that projected over the low wall, or whether it browsed on the portion of the trees standing in the defendant's burial ground, the only evidence being that the horse was found dead in the morning, and the cause of death was the poisonous yew branches. The decision of the learned Judge was now affirmed in an elaborate and learned written judgment. Broadly, the ground of decision is that laid down in the well-known case of "Fletcher *v.* Rylands" (1 "L.R.Ex." 279), where the rule of law is said to be that the person who, for his own purposes, brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril; and if he does not do so, is *primâ facie* answerable for all the damage which is the natural

consequence of its escape. Further, as laid down in another case, that though a man do a lawful thing, yet if any damage thereby befalls another, he shall be held answerable, if he could have avoided it—*e.g.*, by cutting the trees or fencing. As to the defendant's knowledge it would be immaterial whether he knew it or not; he must be held responsible for the natural consequences of his own acts. The maxim "sic utere tuo ut alienum non lædas" applies, and those who interfere with the enjoyment by their neighbours of their premises are held liable.—*Times.*

POISONING OF HORSES AND CATTLE WITH ARSENIC.

At the Whittlesey Sessions, on Thursday, Nov. 14, William Gutteridge, labourer, in the employ of Mr. John Smith, farmer, King's Delph, Cambridgeshire, was charged under "Chaplin's Act," with causing the death of *eight horses and four beasts* belonging to his master.

A quantity of arsenic was mixed with the food given to the animals by the defendant, with the supposed purpose of beautifying their coats. The value of the horses alone was estimated at £600.

It was not shown that the defendant administered the poison with wilful intent, and he was sentenced to a month's imprisonment, with hard labour.—*Cambridge Chronicle.*

FRESHMEN ENTERING THE ROYAL VETERINARY COLLEGE.

The name of Mr. Thompson Hudson was omitted from the List of New Students published in our last Number.

THE FLEMING TESTIMONIAL.

Important Notice.

A meeting will be held at 10, Red Lion Square, on December 5th, at 8.30 p.m., to take into consideration the above subject, and decide as to the form the testimonial should take.

The Central Veterinary Medical Society holds its meeting at 7 p.m. on the same evening, when the discussion on "The Prevailing Equine Skin Epizoötic" will be resumed, The President of the Society will be pleased to welcome any visitors who may attend. (Signed) R. Ward, F.R.C.V.S.

ARMY APPOINTMENTS.

War Office; *Oct. 29th.*

Veterinary Department.—The undermentioned gentlemen to be Veterinary Surgeons on probation:—Thomas Alexander Killick and John Burke Savage.

OBITUARY.

During the past month a retired member of the profession, who for several years had deservedly held a distinguished position in our ranks, has passed away. We allude to Mr. William Mavor, who died somewhat suddenly at his residence, Commercial Road, Bayswater, November 6th, in the fifty-fourth year of his age.

Mr. William Mavor was the eldest son of the *late* Mr. Mavor, of Bond Street, to whose extensive practice he succeeded shortly after passing his examination in May, 1843. In 1861 he was elected a member of the Council of the Royal College of Veterinary Surgeons—an office he held for eight years. During this time, *viz.* in 1859, he was chosen one of the Vice-presidents, and in the following year took office as an Examiner—a post which he filled very efficiently down to 1873, when he retired from all active professional duties. Mr. Mavor was also for some years the head of the firm of Messrs. Mavor Brothers, of Park Street.

We have also to record the death of another member of the profession, who at one time took a prominent part in veterinary affairs, Mr. Arthur Cherry, *late* veterinary surgeon to the police force.

As far back as 1828 we find Mr. Cherry's name in the list of students at the Royal Veterinary College; but it was not until October, 1845, the year following the obtainment of the Charter of Incorporation, that he became a registered member of the profession. Throughout this long interval he declined to present himself for examination by the then existing Court of Examiners of the Royal Veterinary College, on the plea that it was deficient in the number of names of veterinary surgeons, although rich in those of the medical profession.

Mr. Cherry, even in his early days, took an active part in veterinary politics, and was to be found at nearly every professional meeting as an outspoken advocate for popular rights. His views, however, were mostly regarded as too extreme for practical application, and hence they received far less support than they would otherwise have done.

Mr. Cherry held office as a member of the Council of the Royal College of Veterinary Surgeons for some years, *viz.* from 1846 to 1859. He also acted as Registrar from 1849 to 1852.

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